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## Continuously Logged Sediment Acoustical and Physical Properties Data, R/V Haakon Mosby Cores, Norwegian/Greenland Sea

WILLIAM B. SAWYER  
FREDERICK A. BOWLES

*Seafloor Sciences Branch  
Marine Geosciences Division*

EIRIK SUNDVOR

*Institute of Solid Earth Geophysics  
University of Bergen  
Bergen, Norway*

LISA PHELPS

*Institute of Marine Sciences  
University of Southern Mississippi  
Hattiesburg, MS*

WILLIAM R. BRYANT

*Department of Oceanography  
Texas A&M University  
College Station, TX*

PETER R. VOGT  
KATHLEEN CRANE  
JOAN GARDNER

*Marine Physics Branch  
Marine Geosciences Division*

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<b>6. AUTHOR(S)</b> William B. Sawyer, Frederick A. Bowles, Lisa Phelps*, Peter R. Vogt, Kathleen Crane, Joan Gardner, Eirik Sundvor†, and William R. Bryant††				
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<b>11. SUPPLEMENTARY NOTES</b> *Institute of Marine Sciences, University of Southern Mississippi, Hattiesburg, MS; †Institute of Solid Earth Geophysics, University of Bergen, Bergen, Norway; ††Department of Oceanography, Texas A&M University, College Station, TX				
<b>12a. DISTRIBUTION/AVAILABILITY STATEMENT</b>  Approved for public release; distribution unlimited.			<b>12b. DISTRIBUTION CODE</b>	
<b>13. ABSTRACT (Maximum 200 words)</b> Sediment cores were collected in the Greenland/Norwegian Sea for the purpose of ground-truthing previously collected sidescan imagery. This report presents the results of shore-based analyses performed on the cores. Interpretive results are not included. The unopened cores were continuously logged at 2-cm intervals for compressional-wave velocity and gamma-ray attenuation. Wet bulk density, porosity, water content, and void ratio were calculated from the attenuation measurements. Analytical results are presented in the form of spreadsheets and graphs.				
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# **Continuously-Logged, Sediment Acoustical and physical Properties data, R/V Haakon Mosby Cores, Norwegian/Greenland Sea**

## **Background:**

The Naval Research Laboratory (NRL), in cooperation with the University of Bergen (Norway), embarked on a long-term geological/geophysical study of Greenland/Norwegian seafloor processes. In August/September 1995, a joint cruise, partially funded by the U. S. Naval Oceanographic Office, was conducted in the area to "ground-truth" and age-date selected features previously discovered by sidescan imaging. Core analyses were performed in order to address questions of scientific interest. This report is a compilation of these analyses; it does not include interpretative results.

## **Core Recovery and Handling:**

Forty-eight hydroplastic gravity cores were collected at 43 stations (Table 1 and Figure 1), with a recovery of over 100 linear meters of sediment. The core pipe was approximately 5-in diameter (O.D.), PVC cut in 10 ft (3 m) lengths. Each core was cut into 1-m sections and sealed with plastic caps secured with metal hose-clamps. Plastic electrical tape was then wrapped around the cap and clamp to prevent loss of water. The cores were maintained in an upright position until being laid horizontally on the deck for sectioning. Each section was then stored upright for the duration of the cruise. Subsequently, the cores were boxed (upright) and air freighted to NRL for analyses.

## **Analytical Method:**

All the cores but one (HM-76 was not logged) were analyzed at 2 cm intervals for sediment physical and acoustical properties; specifically, compressional-wave (P-wave) velocity, saturated wet bulk density, porosity, water content, and void ratio. The instrument used for these determinations was Texas A&M University's GEOTEK Multisensor Core Logger, a logging device providing continuous measurements of compressional-wave velocity (p-wave), gamma-ray attenuation, and magnetic susceptibility on unopened cores. The cores were logged for p-wave velocity at 500 kHz (Schultheiss and

McPhail, 1989). The p-wave transducers were calibrated to distilled water to 20°C. The gamma-ray attenuations, obtained with a  $^{137}\text{Cs}$  source and scintillation tube, were used to determine saturated wet bulk densities (Boyce, 1976; Weber et al., 1997) which, in turn, were used to derive the other parameters, i.e., porosity, water content, and void ratio. The magnetic susceptibility portion of the logger was not operational. As noted above, each core pipe was cut into three 1-meter long sections. Although this size is convenient for shipping, the main reason is that the logger can accommodate core lengths of only 1 meter.

### **Data Processing:**

The raw velocity and attenuation measurements were processed via a program developed by Jia Y. Liu (Texas A&M University) that reads in logger-generated PC file to produce final parameter outputs (see Appendix). In order to make the calculations, a grain density of  $2.67 \text{ g/cm}^3$  and a pore-water density of  $1.024 \text{ g/cm}^3$  were assumed. In addition, the gamma-ray portion of the logger must be calibrated by measuring a material of known density, in this case, a cylinder of aluminum alloy 6060-T6,  $2.71 \text{ g/cm}^3$ .

### **Data Output:**

The sediment analyses are presented as: (1) spreadsheets, and (2) profiles showing the downcore variation of each property. Data gaps are readily apparent in both formats, but especially in the velocity profiles. The gaps usually occur at the tops and bottoms of each 1-meter section because of poor coupling between the acoustic transducer and the plastic end-caps. Additional data gaps within sections may be caused by either (1) poor coupling between the transducer and the core pipe, (2) air between the core pipe and the sediment inside, or (3) no sediment. It is also apparent that the uppermost few centimeters of the first section of each core (e.g., 0-5 cm, and sometimes as much as 0-20 cm), is usually unlogged. Failure to log the upper part is due to the soupy nature (i.e., low strength) of the most recently deposited sediment, resulting in; (1) a void caused by sediment compaction, and (2) flow of the sediment when the core is laid on its side for logging; thus, allowing air to get between the sediment and the liner.



## **Continuing Study:**

Select cores are being opened for additional analysis in the laboratory. The applied goals of these studies are (a) to understand, and better exploit, the qualitative and quantitative relation between bottom/ subbottom physical/geoacoustic properties and the backscatter strength variations implied by existing seaMARC and SEAMAP data, and (b) to measure or estimate the stability (e.g., shear strength) of the seafloor materials. A suite of cores (HM41-65) taken on the Bear Island submarine fan (Vogt et al., 1993) are presently being studied. Analytical results will be presented at a special session (High-Latitude Gas Venting, Hydrates, and Mass Wasting) of the American Geophysical Union (AGU) Spring Meeting in Baltimore, Maryland (1997). In addition to the problem of marine hydrates, other presented papers will deal with geoacoustic and rheological properties of the mudflows and surrounding hemipelagic sediments, sediment mineralogy, sediment fabric, and correlations between acoustic backscatter imagery and sediment core ground-truthing.

## **Acknowledgments:**

We thank: L. Polyak, C. Jones, E. Mcphee, and A. Nilsen (members of the scientific team), for collecting many of the the cores; the Captain, officers, and crew of the R/V Haakon Mosby; N. Slowey (Texas A&M) for assistance with the core logger, and C. Kennedy (NRL) for machining the aluminum standard and other support. Sediment analyses were supported by the Office of Naval Research through the Naval Research Laboratory-sponsored Bottom Interaction Project, Program Element 0602435N, Project Number BE-35-2-02.

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Vogt, P. R., Crane, K., and Sundvor, E., 1993). Glacigenic mudflows on the Bear Island submarine fan. Eos., Trans. Am. Geophys. Union, 74, 449/452-452.

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Table 1. Locations (in tenths of degrees) of R/V Haakon Mosby gravity cores. Missing numbers represent box core (7), current meter (1), dredge (1), and heat flow (22) stations. In addition, no sediment was recovered at seven gravity core stations.

core	Longitude East (°)	Latitude North (°)	Corrected Depth (m)
HM 3	7.954	80.068	500
HM 4	7.000	79.750	854
HM 5	6.521	79.190	1465
HM 9	7.969	80.043	507
HM 11	6.136	79.111	1237
HM 12	5.198	79.142	1349
HM 16	5.195	79.138	1346
HM 17	7.076	77.341	2054
HM 19	10.425	75.725	2317
HM 29	14.601	74.848	1605
HM 31	14.673	74.841	1536
HM 32	11.441	74.648	2402
HM 34	11.493	74.626	2362
HM 36	12.238	74.407	2264
HM 37	12.337	74.365	2229
HM 38	12.573	74.365	2213
HM 40	12.728	74.395	2204
HM 41	9.331	73.899	2476
HM 43	9.265	73.845	2455
HM 44	9.240	73.766	2424
HM 46	10.193	73.656	2260
HM 48	8.875	73.512	2459
HM 49	9.431	73.197	2300
HM 50	9.618	73.135	2254
HM 51	9.748	73.187	
HM 52	9.901	73.061	2201
HM 53	10.082	73.007	2167
HM 54	8.780	73.013	2359
HM 56	8.593	73.012	2386
HM 58	11.928	73.021	1762
HM 59	11.920	73.075	1764
HM 60	13.765	73.208	1193
HM 63	13.753	73.371	1253
HM 64	15.958	73.257	478
HM 65	15.833	73.083	470
HM 68	14.567	72.035	1261
HM 69	14.577	72.036	1269
HM 72	14.728	72.008	1255
HM 73	14.662	71.947	1302
HM 74	14.652	71.929	1314
HM 75	14.778	71.919	1245
HM 77	14.417	71.917	1419
HM 78	14.233	71.900	1521
HM 80	14.067	71.940	1506
HM 81	13.790	72.017	1416
HM 86	15.692	72.049	684
HM 87	15.145	70.477	2310

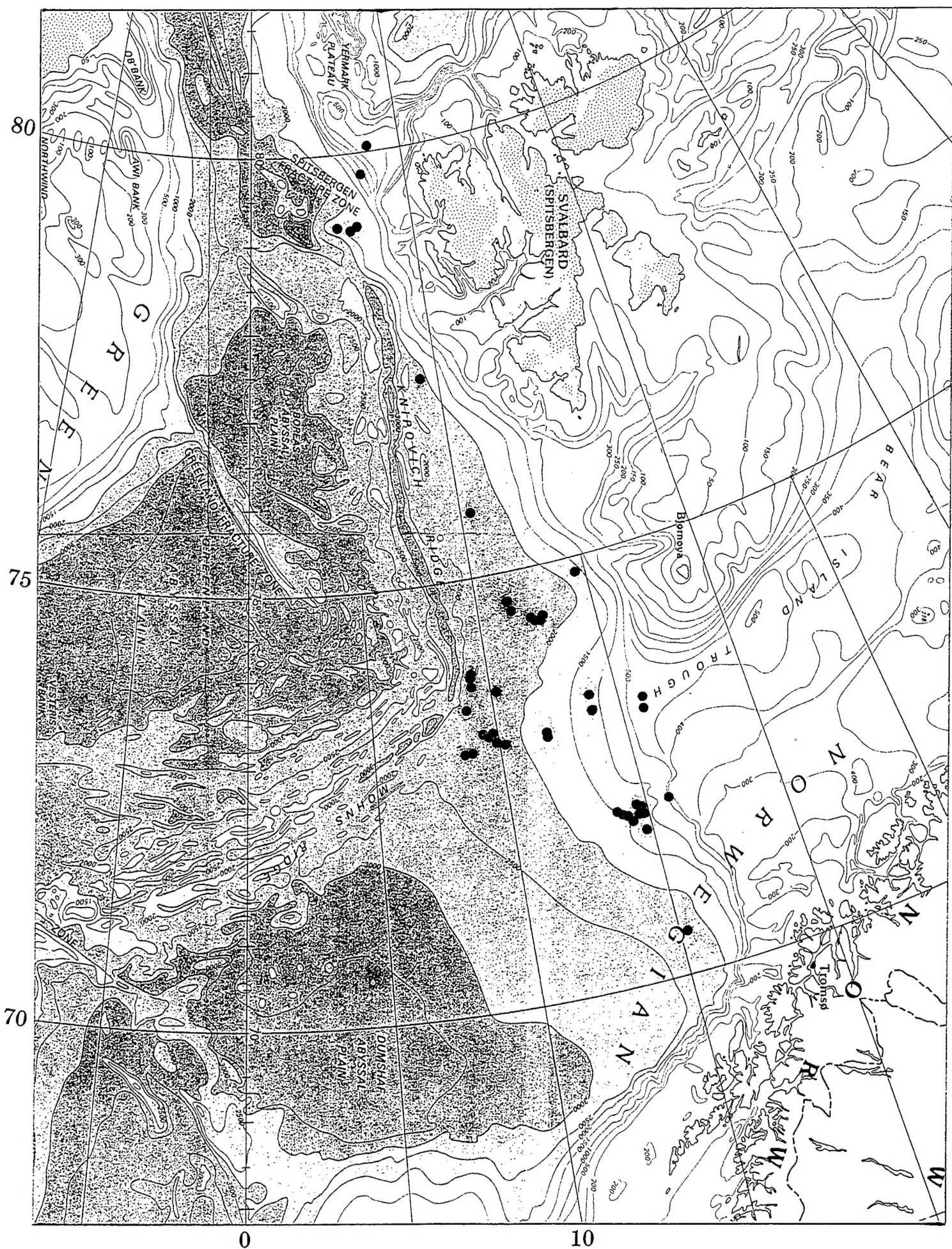


FIG. 1

## HM 3

## HM 3

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.84	39.00	1.02	50.42	1536
2						62	1.82	40.96	1.07	51.65	1532
4						64	1.86	37.51	0.98	49.44	1548
6						66	1.80	42.92	1.12	52.81	1531
8						68	1.78	45.21	1.18	54.11	1523
10						70	1.79	44.27	1.15	53.58	1520
12	1.77	46.20	1.20	54.64		72	1.80	43.44	1.13	53.11	1530
14	1.82	40.49	1.06	51.36		74	1.81	42.33	1.10	52.47	1535
16	1.87	36.23	0.94	48.57		76	1.79	43.89	1.14	53.37	1527
18	1.93	31.39	0.82	45.01	1569	78	1.89	34.86	0.91	47.61	
20	1.94	30.46	0.79	44.27	1584	80	1.78	44.61	1.16	53.77	1525
22	1.92	32.28	0.84	45.70	1582	82	1.76	47.30	1.23	55.22	1519
24	1.88	35.69	0.93	48.20	1567	84	1.78	45.36	1.18	54.19	1519
26	1.86	37.50	0.98	49.44	1547	86	1.72	52.51	1.37	57.79	1510
28	1.87	36.51	0.95	48.77		88	1.74	50.10	1.31	56.64	1513
30	1.83	40.36	1.05	51.27	1553	90	1.74	50.11	1.31	56.65	1513
32	1.73	50.47	1.32	56.82	1514	92	1.80	42.94	1.12	52.82	1517
34	1.71	53.08	1.38	58.05	1504	94	1.80	43.33	1.13	53.05	
36	1.66	61.23	1.60	61.49	1495	96	1.73	51.40	1.34	57.27	
38	1.66	61.42	1.60	61.56	1499	98	1.81	41.58	1.08	52.02	1549
40	1.81	42.22	1.10	52.40	1539	100					1554
42	1.71	53.15	1.39	58.09	1507	102					
44	1.73	51.31	1.34	57.23	1511	104					
46	1.75	48.53	1.27	55.86	1513	106					
48	1.73	50.66	1.32	56.91	1506	108	1.78	44.61	1.16	53.77	
50	1.74	49.51	1.29	56.35	1513	110	1.74	49.71	1.30	56.45	
52	1.77	45.79	1.19	54.42	1517	112	1.70	54.59	1.42	58.74	
54	1.79	43.91	1.14	53.38	1525	114	1.74	49.63	1.29	56.41	
56	1.80	42.62	1.11	52.64	1534	116	1.79	44.22	1.15	53.56	
58	1.81	41.92	1.09	52.22	1531	118	1.81	41.60	1.08	52.03	

## HM 3

## HM 3

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
120	1.82	41.42	1.08	51.92		180	1.93	31.12	0.81	44.80	1572
122	1.81	42.29	1.10	52.44		182	1.95	30.12	0.79	43.99	1574
124	1.81	41.49	1.08	51.97		184	1.93	31.20	0.81	44.86	1570
126	1.79	44.37	1.16	53.64		186	1.93	31.03	0.81	44.73	1568
128	1.78	45.31	1.18	54.16		188	1.92	31.85	0.83	45.37	1567
130	1.82	41.28	1.08	51.84		190	1.93	31.42	0.82	45.03	1569
132	1.85	38.52	1.00	50.11		192	1.93	31.46	0.82	45.07	1569
134	1.96	29.35	0.77	43.35	1536	194	1.93	31.42	0.82	45.04	1566
136	1.95	29.56	0.77	43.53	1553	196	1.94	30.64	0.80	44.41	1570
138	1.87	36.23	0.94	48.58	1557	198	1.98	28.02	0.73	42.21	1584
140	1.90	34.00	0.89	46.99	1555	200	1.89	34.24	0.89	47.17	1601
142	1.89	34.84	0.91	47.60	1569	202	1.91	32.55	0.85	45.91	1605
144	1.93	31.53	0.82	45.12	1566	204					1612
146	1.95	29.52	0.77	43.50	1566						
148	1.90	33.78	0.88	46.83	1564						
150	1.95	29.81	0.78	43.73	1571						
152	1.94	30.93	0.81	44.64	1566						
154	1.93	30.96	0.81	44.67	1566						
156	1.95	29.50	0.77	43.48	1571						
158	1.96	29.43	0.77	43.42	1577						
160	1.95	29.77	0.78	43.70	1572						
162	1.96	28.85	0.75	42.93	1570						
164	1.97	28.09	0.73	42.28	1567						
166	1.93	31.61	0.82	45.18	1570						
168	1.94	30.36	0.79	44.18	1571						
170	1.94	30.50	0.80	44.30	1579						
172	2.05	23.11	0.60	37.60							
174	2.00	26.34	0.69	40.71	1590						
176	2.00	26.59	0.69	40.94	1591						
178	1.94	30.84	0.80	44.58	1565						

## HM 4

## HM 4

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.61	69.69	1.82	64.50	
2	1.49	96.32	2.51	71.52		62	1.66	61.33	1.60	61.53	1482
4	1.68	58.46	1.52	60.38		64	1.74	49.69	1.30	56.44	1540
6	1.80	43.26	1.13	53.01		66					
8	1.82	41.31	1.08	51.85	1549	68	1.70	55.16	1.44	58.99	
10	1.78	45.57	1.19	54.30	1535	70	1.69	57.03	1.49	59.79	
12	1.77	46.44	1.21	54.77	1512	72	1.75	48.85	1.27	56.02	
14	1.64	63.55	1.66	62.36	1498	74	1.73	51.44	1.34	57.29	
16	1.61	68.52	1.79	64.12	1494	76	1.68	57.27	1.49	59.89	
18	1.62	66.99	1.75	63.59	1493	78	1.72	51.94	1.35	57.52	
20	1.59	72.48	1.89	65.40	1491	80	1.70	54.97	1.43	58.90	
22	1.62	67.22	1.75	63.67	1491	82	1.67	59.16	1.54	60.67	
24	1.63	64.98	1.69	62.89	1493	84	1.63	65.43	1.71	63.05	1498
26	1.63	65.49	1.71	63.07	1491	86	1.70	54.96	1.43	58.90	1498
28	1.66	61.48	1.60	61.58	1492	88	1.70	55.07	1.44	58.95	1500
30	1.66	60.52	1.58	61.21	1492	90	1.70	54.79	1.43	58.82	1499
32	1.65	62.63	1.63	62.02	1493	92	1.67	59.43	1.55	60.78	1493
34	1.65	61.85	1.61	61.73	1494	94	1.68	58.08	1.51	60.23	1494
36	1.63	66.30	1.73	63.35	1495	96	1.67	59.32	1.55	60.73	1495
38	1.66	60.28	1.57	61.11	1500	98	1.75	48.72	1.27	55.95	
40	1.70	55.36	1.44	59.07	1503	100	1.74	49.37	1.29	56.28	
42	1.72	52.07	1.36	57.59	1507	102	1.73	50.73	1.32	56.95	1501
44	1.70	55.30	1.44	59.05	1504	104	1.72	52.23	1.36	57.66	1502
46	1.67	59.23	1.54	60.70	1496	106	1.73	50.80	1.32	56.98	1503
48	1.68	58.62	1.53	60.45	1496	108	1.73	51.38	1.34	57.26	1503
50	1.65	61.83	1.61	61.72	1495	110	1.75	48.39	1.26	55.78	1510
52	1.64	64.42	1.68	62.68	1490	112	1.76	47.74	1.24	55.45	1509
54	1.61	69.00	1.80	64.27	1488	114	1.71	53.02	1.38	58.03	1503
56	1.65	62.21	1.62	61.86	1492	116	1.73	51.65	1.35	57.39	1502
58	1.68	57.54	1.50	60.01	1496	118	1.74	50.03	1.30	56.61	1505
						120	1.74	49.20	1.28	56.20	1509



## HM 4

## HM 4

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.74	49.32	1.29	56.25	1513	184	1.77	46.61	1.22	54.86	1462
124	1.86	37.59	0.98	49.50	1516	186	1.79	43.86	1.14	53.35	1422
126	1.87	36.11	0.94	48.50	1538	188	1.83	40.24	1.05	51.20	1470
128	1.88	35.40	0.92	48.00	1551	190	1.80	43.44	1.13	53.11	1425
130	1.99	26.74	0.70	41.08	1589	192	1.85	38.03	0.99	49.79	1506
132	1.98	27.65	0.72	41.90	1589	194	1.80	43.47	1.13	53.13	1509
134	1.99	27.11	0.71	41.42	1585	196	1.72	51.87	1.35	57.49	1497
136	1.94	30.50	0.80	44.30	1566	198	1.69	55.98	1.46	59.34	1493
138	1.99	27.18	0.71	41.48	1583	200	1.69	56.91	1.48	59.74	1472
140	1.95	29.54	0.77	43.51	1573	202	1.78	44.90	1.17	53.93	1509
142	1.96	28.95	0.75	43.01	1583	204	1.76	47.80	1.25	55.48	1508
144	2.01	25.84	0.67	40.26	1584	206	1.72	52.08	1.36	57.59	1502
146	1.95	29.88	0.78	43.79	1568	208	1.75	48.16	1.26	55.67	1502
148	1.97	28.10	0.73	42.29	1579	210	1.74	49.34	1.29	56.27	1495
150	1.96	29.03	0.76	43.09	1562	212	1.81	42.08	1.10	52.32	1527
152	1.97	28.18	0.73	42.36	1563	214	1.84	39.43	1.03	50.69	1531
154	1.87	36.65	0.96	48.86	1539	216	1.85	37.96	0.99	49.74	1524
156	2.00	26.51	0.69	40.87	1549	218	1.83	39.61	1.03	50.81	1527
158	1.98	27.86	0.73	42.08	1547	220	1.74	49.25	1.28	56.22	1482
160	1.84	39.02	1.02	50.43		222	1.73	50.97	1.33	57.06	1502
162	1.97	28.50	0.74	42.63	1559	224	1.68	58.34	1.52	60.34	
164	1.98	27.57	0.72	41.82		226	1.70	55.69	1.45	59.22	1491
166						228	1.51	92.24	2.40	70.63	
168	1.70	55.15	1.44	58.98							
170	1.71	53.39	1.39	58.20							
172	1.77	45.72	1.19	54.38							
174	1.75	48.79	1.27	55.99							
176	1.77	46.61	1.22	54.86							
178	1.78	44.85	1.17	53.91							
180	1.76	47.48	1.24	55.32							
182	1.77	46.18	1.20	54.63							



## HM 5

## HM 5

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						64	1.51	92.31	2.41	70.65	1485
2						66	1.52	87.69	2.29	69.57	1483
4						68	1.50	94.04	2.45	71.03	1481
6	1.46	107.69	2.81	73.74		70	1.51	92.09	2.40	70.60	1482
8	1.53	85.72	2.24	69.09		72	1.50	94.97	2.48	71.23	1481
10	1.52	89.37	2.33	69.97		74	1.51	90.42	2.36	70.22	1483
12	1.53	85.35	2.23	69.00		76	1.52	89.73	2.34	70.06	1481
14	1.50	92.98	2.42	70.80		78	1.53	86.17	2.25	69.20	1483
16	1.53	86.27	2.25	69.22	1487	80	1.51	91.78	2.39	70.53	1481
18	1.53	85.44	2.23	69.02	1485	82	1.51	91.61	2.39	70.49	1481
20	1.53	86.71	2.26	69.33	1486	84	1.51	91.32	2.38	70.42	1482
22	1.52	89.62	2.34	70.03	1487	86	1.52	89.97	2.35	70.11	1482
24	1.53	86.91	2.27	69.38	1487	88	1.53	86.38	2.25	69.25	1483
26	1.55	82.72	2.16	68.32	1487	90	1.55	82.20	2.14	68.19	1484
28	1.53	86.66	2.26	69.32	1484	92	1.55	81.60	2.13	68.03	1487
30	1.53	87.65	2.29	69.56	1483	94	1.57	78.23	2.04	67.10	1489
32	1.51	92.85	2.42	70.77	1484	96	1.49	96.09	2.51	71.47	1509
34	1.51	90.71	2.37	70.28	1483	98	1.55	81.61	2.13	68.03	1507
36	1.54	82.85	2.16	68.36	1484	100	1.55	81.41	2.12	67.98	
38	1.57	78.10	2.04	67.07	1487	102	1.43	115.54	3.01	75.08	
40	1.55	80.57	2.10	67.75	1486	104	1.42	121.58	3.17	76.02	
42	1.55	81.86	2.13	68.10	1485	106	1.50	94.79	2.47	71.19	
44	1.53	85.35	2.23	69.00	1484	108	1.54	83.59	2.18	68.55	
46	1.55	82.42	2.15	68.24	1481	110	1.46	104.96	2.74	73.24	
48	1.52	90.11	2.35	70.15	1480	112	1.48	100.36	2.62	72.35	
50	1.52	88.13	2.30	69.68	1481	114	1.52	89.22	2.33	69.94	
52	1.52	88.64	2.31	69.80	1482	116	1.54	83.73	2.18	68.58	
54	1.53	86.60	2.26	69.31	1481	118	1.54	83.62	2.18	68.56	
56	1.54	83.61	2.18	68.55	1482	120	1.60	71.57	1.87	65.11	
58	1.55	82.03	2.14	68.14	1482	122	1.56	80.25	2.09	67.66	
60	1.51	90.47	2.36	70.23	1481	124	1.54	83.04	2.17	68.41	
62	1.52	90.16	2.35	70.16	1481	126	1.57	78.15	2.04	67.08	

## HM 5

## HM 5

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
130	1.61	69.82	1.82	64.55		196	1.69	56.59	1.48	59.61	1534
132	1.59	73.14	1.91	65.60		198	1.73	50.54	1.32	56.85	1533
134	1.60	71.80	1.87	65.18		200					1551
136	1.64	64.29	1.68	62.64		202					
138	1.60	70.52	1.84	64.77		204	1.66	61.66	1.61	61.65	
140	1.60	72.13	1.88	65.29		206	1.69	56.49	1.47	59.56	
142	1.68	58.13	1.52	60.25		208	1.73	51.20	1.34	57.18	
144	1.68	58.47	1.52	60.39	1492	210	1.73	50.45	1.32	56.81	
146	1.68	58.56	1.53	60.43	1494	212	1.79	43.68	1.14	53.25	
148	1.66	60.94	1.59	61.37	1492	214	1.78	45.15	1.18	54.07	
150	1.65	62.23	1.62	61.87	1493	216	1.75	48.41	1.26	55.80	1504
152	1.63	65.65	1.71	63.12	1486	218	1.70	55.00	1.43	58.92	1498
154	1.63	66.64	1.74	63.47	1487	220	1.71	53.88	1.41	58.42	1497
156	1.66	61.45	1.60	61.57	1494	222	1.72	52.96	1.38	58.00	1497
158	1.66	61.55	1.60	61.61	1496	224	1.68	57.93	1.51	60.17	1495
160	1.71	53.96	1.41	58.45	1503	226	1.69	56.64	1.48	59.63	1494
162	1.68	58.28	1.52	60.31	1488	228	1.68	57.40	1.50	59.95	1495
164	1.86	37.59	0.98	49.50	1492	230	1.68	58.28	1.52	60.31	1496
166	1.73	51.34	1.34	57.24		232	1.73	50.44	1.32	56.81	1504
168	1.74	49.70	1.30	56.44	1509	234	1.73	51.54	1.34	57.34	1503
170	1.65	62.66	1.63	62.03	1493	236	1.70	54.89	1.43	58.87	1495
172	1.65	62.47	1.63	61.96	1494	238	1.69	56.08	1.46	59.39	1497
174	1.67	59.06	1.54	60.63	1492	240	1.68	57.47	1.50	59.98	1495
176	1.65	62.86	1.64	62.11	1494	242	1.70	54.91	1.43	58.88	1496
178	1.70	54.86	1.43	58.85	1503	244	1.71	53.98	1.41	58.46	1497
180	1.72	52.04	1.36	57.57	1503	246	1.71	54.24	1.41	58.58	1499
182	1.70	55.63	1.45	59.19	1497	248	1.64	63.55	1.66	62.36	
184	1.68	58.03	1.51	60.21	1499	250	1.59	73.93	1.93	65.84	
186	1.61	69.14	1.80	64.32	1487						
188	1.63	66.56	1.74	63.44	1489						
190	1.64	63.46	1.65	62.33	1493						
192	1.72	52.77	1.38	57.91	1505						
194	1.69	56.76	1.48	59.68							

## HM 9

## HM 9

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.95	29.90	0.78	43.81	1580
2						62	1.97	28.69	0.75	42.80	1580
4						64	1.96	28.89	0.75	42.96	1580
6						66	1.95	29.66	0.77	43.61	1577
8						68	1.95	29.79	0.78	43.71	1576
10						70	1.96	29.16	0.76	43.19	1577
12						72	1.96	28.76	0.75	42.86	1576
14						74	1.98	27.76	0.72	41.99	1574
16	2.03	24.12	0.63	38.61		76	1.95	29.85	0.78	43.76	1575
18	2.03	24.43	0.64	38.92		78	1.98	27.64	0.72	41.88	1578
20	1.91	32.57	0.85	45.92	1567	80	1.95	29.57	0.77	43.53	1580
22	1.89	34.29	0.89	47.20	1550	82	1.96	29.15	0.76	43.19	1578
24	1.89	34.54	0.90	47.38	1551	84	1.96	29.11	0.76	43.15	1574
26	1.95	30.10	0.78	43.97	1566	86	1.96	28.85	0.75	42.93	1575
28	1.97	28.06	0.73	42.25	1583	88	1.96	29.18	0.76	43.21	1574
30	1.99	27.31	0.71	41.59	1589	90	1.95	29.70	0.77	43.64	1576
32	1.96	29.31	0.76	43.32	1585	92	1.94	30.26	0.79	44.11	1577
34	1.94	30.75	0.80	44.50	1574	94	1.98	27.80	0.72	42.03	1579
36	1.95	29.65	0.77	43.60	1578	96	1.94	30.51	0.80	44.31	1577
38	1.98	27.83	0.73	42.05	1582	98	1.95	29.63	0.77	43.59	1577
40	1.93	31.10	0.81	44.78	1577	100	1.97	28.60	0.75	42.71	1576
42	1.92	32.27	0.84	45.69	1562	102	1.94	30.75	0.80	44.50	1578
44	1.89	34.18	0.89	47.13	1561	104	1.96	29.14	0.76	43.18	1574
46	1.94	30.23	0.79	44.08	1576	106	1.95	29.77	0.78	43.70	1572
48	1.94	30.45	0.79	44.25	1575	108	1.96	29.25	0.76	43.27	1573
50	1.94	30.75	0.80	44.50	1572	110	1.95	29.64	0.77	43.59	1576
52	1.94	30.55	0.80	44.34	1573	112	1.96	28.98	0.76	43.04	1578
54	1.94	30.41	0.79	44.22	1574	114	1.97	28.66	0.75	42.77	1583
56	1.97	28.47	0.74	42.60	1583	116	1.92	32.21	0.84	45.65	
58	1.96	29.34	0.76	43.34	1583	118	1.90	33.46	0.87	46.59	
	1.96	29.34	0.77	43.34	1580	120	1.95	29.88	0.78	43.79	1601

## HM 11

## HM 11

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.68	57.72	1.50	60.08	1502
2						62	1.65	62.00	1.62	61.78	1496
4						64	1.65	62.00	1.62	61.78	1495
6						66	1.65	63.22	1.65	62.24	1494
8						68	1.64	64.45	1.68	62.69	1495
10						70	1.64	64.34	1.68	62.65	1494
12						72	1.65	62.55	1.63	61.99	1497
14						74	1.59	74.08	1.93	65.89	1495
16						76	1.60	71.13	1.85	64.97	1492
18						78	1.57	76.56	2.00	66.62	1491
20						80	1.48	100.99	2.63	72.48	1494
22						82	1.63	66.29	1.73	63.35	1492
24	1.45	109.06	2.84	73.98		84	1.62	67.89	1.77	63.90	1492
26	1.45	110.02	2.87	74.15		86	1.62	68.03	1.77	63.95	1495
28	1.46	105.40	2.75	73.32		88	1.59	73.48	1.92	65.71	1494
30	1.48	100.22	2.61	72.32		90	1.63	65.94	1.72	63.23	1493
32	1.51	91.72	2.39	70.52		92	1.63	65.89	1.72	63.21	1491
34	1.58	76.14	1.99	66.50		94	1.60	70.37	1.83	64.73	1491
36	1.63	66.08	1.72	63.28		96	1.52	88.12	2.30	69.67	1510
38	1.67	59.39	1.55	60.76		98	1.57	76.23	1.99	66.53	1517
40	1.67	60.04	1.57	61.02	1501	100	1.52	88.23	2.30	69.70	1517
42	1.69	56.00	1.46	59.35	1499	102					
44	1.67	59.65	1.56	60.86	1495	104	1.76	47.55	1.24	55.35	
46	1.64	64.59	1.68	62.75	1493	106	1.72	52.30	1.36	57.69	
48	1.67	59.37	1.55	60.75	1494	108	1.78	44.75	1.17	53.85	1527
50	1.65	61.87	1.61	61.73	1496	110	1.80	43.00	1.12	52.86	1437
52	1.67	60.11	1.57	61.05	1499	112	1.80	42.82	1.12	52.75	1548
54	1.70	55.69	1.45	59.22	1500	114	1.82	40.91	1.07	51.61	1548
56	1.66	60.59	1.58	61.24	1497	116	1.83	40.33	1.05	51.26	1550
58	1.68	58.17	1.52	60.27	1501	118	1.82	40.89	1.07	51.60	1546
						120	1.82	40.99	1.07	51.66	1545

## HM 11

## HM 11

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.82	41.17	1.07	51.77	1542	184	1.84	39.18	1.02	50.54	1546
124	1.83	40.16	1.05	51.15	1541	186	1.85	37.93	0.99	49.72	1546
126	1.82	41.08	1.07	51.72	1543	188	1.85	38.51	1.00	50.11	1548
128	1.82	40.88	1.07	51.59	1542	190	1.86	36.84	0.96	48.99	1550
130	1.80	42.54	1.11	52.59	1543	192	1.84	38.88	1.01	50.34	1551
132	1.83	39.56	1.03	50.77	1543	194	1.88	35.47	0.92	48.04	1553
134	1.84	38.67	1.01	50.21	1543	196	1.78	45.25	1.18	54.12	
136	1.84	38.74	1.01	50.25	1539	198	1.86	36.72	0.96	48.91	
138	1.84	39.39	1.03	50.67	1541	200	1.88	35.78	0.93	48.27	1544
140	1.83	39.86	1.04	50.96	1544	202					
142	1.83	40.18	1.05	51.17	1544	204					
144	1.82	40.82	1.06	51.56	1543	206					
146	1.84	39.09	1.02	50.48	1538	208	1.43	116.75	3.04	75.27	
148	1.83	40.43	1.05	51.32	1538	210	1.49	98.29	2.56	71.93	
150	1.81	41.79	1.09	52.15	1541	212	1.48	101.22	2.64	72.52	
152	1.82	40.92	1.07	51.62	1540	214	1.41	123.70	3.23	76.33	
154	1.82	41.27	1.08	51.83	1542	216	1.48	99.30	2.59	72.14	1482
156	1.84	38.64	1.01	50.19	1542	218	1.44	113.23	2.95	74.70	1484
158	1.83	39.55	1.03	50.77	1543	220	1.42	121.11	3.16	75.95	
160	1.81	41.53	1.08	51.99	1544	222	1.46	104.87	2.73	73.22	
162	1.82	40.60	1.06	51.43	1543	224	1.54	85.03	2.22	68.92	1459
164	1.85	38.51	1.00	50.10	1545	226	1.55	82.49	2.15	68.26	1465
166	1.82	40.88	1.07	51.60	1545	228	1.53	86.09	2.24	69.18	1473
168	1.83	40.31	1.05	51.25	1547	230	1.49	98.49	2.57	71.97	1484
170	1.84	39.18	1.02	50.53	1546	232	1.53	86.76	2.26	69.35	1459
172	1.82	40.54	1.06	51.39	1544	234	1.54	84.52	2.20	68.79	1485
174	1.83	39.73	1.04	50.88	1544	236	1.52	87.90	2.29	69.62	1484
176	1.85	37.82	0.99	49.65	1546	238					1473
178	1.83	40.18	1.05	51.16	1546	240	1.53	85.35	2.23	69.00	1482
180	1.84	39.37	1.03	50.65	1547	242	1.52	89.06	2.32	69.90	1481
182	1.81	41.69	1.09	52.09	1536	244	1.51	91.36	2.38	70.43	1479

# HM 11

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.48	98.77	2.58	72.03	1480
248	1.51	91.40	2.38	70.44	1480
250	1.53	85.46	2.23	69.02	1481
252	1.52	88.93	2.32	69.87	1479
254	1.50	93.56	2.44	70.93	1478
256	1.47	102.34	2.67	72.74	1479
258	1.53	86.36	2.25	69.25	1481
260	1.54	83.12	2.17	68.43	1480
262	1.54	83.04	2.17	68.41	1479
264	1.57	76.72	2.00	66.67	1480
266	1.56	79.40	2.07	67.43	1479
268	1.56	78.71	2.05	67.24	1481
270	1.60	70.39	1.84	64.73	1483
272	1.54	85.00	2.22	68.91	
274	1.58	75.50	1.97	66.31	1514
276	1.59	73.19	1.91	65.62	1508
278					1504

## HM 12

## HM 12

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.49	96.47	2.52	71.55	1487
2						62	1.49	96.65	2.52	71.59	1490
4						64	1.49	95.93	2.50	71.44	1492
6						66	1.52	89.82	2.34	70.08	1490
8						68	1.49	98.04	2.56	71.88	1487
10						70	1.51	91.55	2.39	70.48	1486
12						72	1.51	92.69	2.42	70.73	1485
14						74	1.49	96.17	2.51	71.49	1486
16						76	1.51	91.58	2.39	70.48	1486
18						78	1.49	97.35	2.54	71.74	1485
20	1.43	116.81	3.05	75.28		80	1.48	99.40	2.59	72.16	1483
22	1.47	102.66	2.68	72.80	1496	82	1.49	96.89	2.53	71.64	1483
24	1.49	97.06	2.53	71.68	1499	84	1.48	99.74	2.60	72.23	1483
26	1.46	107.90	2.81	73.78	1485	86	1.49	96.19	2.51	71.49	1484
28	1.47	101.80	2.65	72.63	1492	88	1.51	92.56	2.41	70.70	1484
30	1.47	102.02	2.66	72.68	1489	90	1.48	98.84	2.58	72.05	1484
32	1.46	106.27	2.77	73.48	1488	92	1.52	89.28	2.33	69.95	1485
34	1.47	103.37	2.70	72.94	1491	94	1.48	99.53	2.60	72.18	1485
36	1.51	92.09	2.40	70.60	1489	96	1.42	119.93	3.13	75.77	
38	1.48	100.70	2.63	72.42	1488	98	1.49	97.01	2.53	71.67	1504
40	1.47	102.81	2.68	72.83	1487	100	1.51	90.84	2.37	70.31	1507
42	1.48	101.60	2.65	72.60	1487						
44	1.50	95.18	2.48	71.28	1488						
46	1.49	98.00	2.56	71.87	1488						
48	1.46	105.47	2.75	73.33	1487						
50	1.49	95.93	2.50	71.44	1485						
52	1.50	94.22	2.46	71.07	1486						
54	1.50	94.56	2.47	71.15	1486	108	1.43	118.74	3.10	75.59	
56	1.47	104.58	2.73	73.17	1486	110	1.47	101.72	2.65	72.62	
58	1.50	94.55	2.47	71.14	1486	112	1.50	93.52	2.44	70.92	
	1.49	96.39	2.51	71.54	1485	114	1.47	101.72	2.65	72.62	
	1.49	95.78	2.50	71.41	1486	116	1.43	119.06	3.10	75.64	
	1.49	98.34	2.56	71.94	1484	118	1.48	99.72	2.60	72.22	
	1.49	98.01	2.56	71.88	1486	120	1.45	109.24	2.85	74.01	

## HM 12

## HM 12

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.48	99.62	2.60	72.20		184	1.51	92.59	2.41	70.71	1480
124	1.44	112.19	2.93	74.52		186	1.48	98.99	2.58	72.07	1481
126	1.50	93.11	2.43	70.83		188	1.52	89.15	2.32	69.92	1481
128	1.52	89.38	2.33	69.97		190	1.48	99.00	2.58	72.08	1481
130	1.50	93.31	2.43	70.87		192	1.53	86.81	2.26	69.36	1484
132	1.52	89.45	2.33	69.99		194	1.52	89.86	2.34	70.09	1485
134	1.52	89.31	2.33	69.96	1477	196	1.45	110.99	2.89	74.32	
136	1.48	100.13	2.61	72.31	1480	198	1.50	94.64	2.47	71.16	1501
138	1.46	107.53	2.80	73.71	1482	200	1.42	119.33	3.11	75.68	1507
140	1.46	105.17	2.74	73.28	1483	202					
142	1.47	101.72	2.65	72.62	1484	204					
144	1.48	99.40	2.59	72.16	1482	206					
146	1.47	102.24	2.67	72.72	1481	208					
148	1.46	104.92	2.74	73.23	1481	210	1.41	126.59	3.30	76.75	
150	1.48	100.56	2.62	72.39	1480	212	1.46	105.27	2.74	73.30	
152	1.45	108.83	2.84	73.94	1481	214	1.42	122.50	3.19	76.16	
154	1.44	114.58	2.99	74.92	1481	216	1.37	143.40	3.74	78.90	
156	1.46	107.68	2.81	73.74	1481	218	1.50	93.35	2.43	70.88	
158	1.49	97.62	2.55	71.79	1482	220	1.48	100.84	2.63	72.45	
160	1.49	98.41	2.57	71.96	1481	222	1.48	98.90	2.58	72.06	
162	1.46	105.48	2.75	73.33	1481	224	1.49	98.11	2.56	71.90	
164	1.47	104.10	2.71	73.08	1481	226	1.51	90.65	2.36	70.27	
166	1.44	112.14	2.92	74.52	1480	228	1.50	95.61	2.49	71.37	
168	1.49	96.60	2.52	71.58	1479	230	1.49	95.86	2.50	71.42	
170	1.51	91.17	2.38	70.39	1482	232	1.48	99.83	2.60	72.25	
172	1.50	93.18	2.43	70.84	1482	234	1.53	85.83	2.24	69.12	
174	1.50	93.78	2.45	70.97	1481	236	1.52	89.14	2.32	69.92	
176	1.49	97.57	2.54	71.78	1480	238	1.50	93.84	2.45	70.99	
178	1.51	92.24	2.41	70.63	1480	240	1.48	98.67	2.57	72.01	
180	1.49	96.68	2.52	71.60	1480	242	1.52	87.86	2.29	69.61	
182	1.50	95.21	2.48	71.29	1481	244	1.51	91.39	2.38	70.44	



# HM 12

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.49	97.92	2.55	71.86	
248	1.50	93.16	2.43	70.84	
250	1.54	83.45	2.18	68.51	
252	1.52	89.62	2.34	70.03	1482
254	1.49	98.10	2.56	71.89	1480
256	1.50	95.57	2.49	71.36	1481
258	1.50	95.03	2.48	71.25	1480
260	1.48	101.10	2.64	72.50	1481
262	1.51	92.38	2.41	70.66	1480
264	1.49	95.70	2.50	71.39	1479
266	1.47	104.09	2.71	73.08	1479
268	1.49	97.35	2.54	71.74	1479
270	1.50	94.89	2.47	71.22	1480
272	1.48	98.60	2.57	72.00	1479
274	1.48	101.39	2.64	72.55	1479
276	1.49	96.46	2.52	71.55	1480
278	1.51	91.76	2.39	70.52	1480
280	1.49	96.05	2.50	71.46	1480
282	1.46	107.56	2.80	73.71	1479
284	1.49	98.52	2.57	71.98	1480
286	1.49	98.37	2.56	71.95	1480
288	1.48	98.83	2.58	72.04	1480
290	1.51	90.94	2.37	70.34	1481
292	1.48	100.30	2.62	72.34	1480
294	1.51	91.89	2.40	70.55	

## HM 16

## HM 16

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.50	94.14	2.45	71.05	1482
2						62	1.48	99.12	2.58	72.10	1481
4						64	1.49	97.89	2.55	71.85	1481
6						66	1.50	95.06	2.48	71.25	1480
8						68	1.49	96.59	2.52	71.58	1479
10						70	1.51	91.76	2.39	70.52	1481
12	1.46	106.09	2.77	73.45		72	1.49	95.87	2.50	71.43	1481
14	1.45	109.80	2.86	74.11		74	1.50	95.67	2.49	71.38	1481
16	1.46	105.96	2.76	73.42		76	1.51	91.38	2.38	70.44	1481
18	1.46	105.02	2.74	73.25	1480	78	1.48	101.49	2.65	72.57	1481
20	1.51	91.82	2.39	70.54	1488	80	1.47	103.39	2.70	72.94	1480
22	1.52	89.93	2.34	70.10	1486	82	1.48	101.41	2.64	72.56	1482
24	1.49	97.35	2.54	71.74	1486	84	1.50	95.54	2.49	71.36	1482
26	1.51	92.00	2.40	70.58	1487	86	1.48	99.92	2.61	72.26	1481
28	1.53	86.65	2.26	69.32	1489	88	1.47	104.08	2.71	73.07	1480
30	1.54	83.77	2.18	68.59	1491	90	1.48	101.32	2.64	72.54	1480
32	1.52	89.07	2.32	69.90	1487	92	1.45	109.46	2.85	74.05	1481
34	1.51	91.17	2.38	70.39	1486	94	1.44	114.32	2.98	74.88	
36	1.49	97.06	2.53	71.68	1485	96	1.47	102.93	2.68	72.85	1500
38	1.50	94.53	2.46	71.14	1485	98					1504
40	1.48	101.13	2.64	72.50	1487	100					
42	1.49	98.35	2.56	71.94	1486	102					1509
44	1.46	105.28	2.75	73.30	1483	104					1500
46	1.49	98.41	2.57	71.96	1484	106					
48	1.49	97.25	2.54	71.72	1482	108					1486
50	1.47	104.37	2.72	73.13	1482	110	1.53	87.44	2.28	69.51	1485
52	1.47	101.89	2.66	72.65	1482	112	1.54	84.58	2.21	68.80	1484
54	1.48	100.48	2.62	72.38	1482	114	1.51	90.61	2.36	70.26	1481
56	1.46	107.60	2.81	73.72	1481	116	1.50	94.20	2.46	71.07	1480
58	1.46	106.49	2.78	73.52	1481	118	1.52	89.18	2.33	69.93	1482
						120	1.49	97.02	2.53	71.67	1478

## HM 16

## HM 16

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.49	98.25	2.56	71.92	1478	184	1.48	100.98	2.63	72.47	1480
124	1.53	87.04	2.27	69.42	1481	186	1.46	106.54	2.78	73.53	1480
126	1.53	86.37	2.25	69.25	1482	188	1.47	104.42	2.72	73.14	1480
128	1.54	84.95	2.21	68.89	1483	190	1.49	96.83	2.52	71.63	1480
130	1.53	87.31	2.28	69.48	1482	192	1.47	103.00	2.69	72.87	1482
132	1.55	81.86	2.13	68.10	1483	194	1.45	108.55	2.83	73.89	1492
134	1.53	85.85	2.24	69.12	1483	196	1.42	119.34	3.11	75.68	1499
136	1.52	88.34	2.30	69.73	1483	198	1.46	106.29	2.77	73.48	1497
138	1.52	88.59	2.31	69.79	1484	200					
140	1.50	92.98	2.42	70.80	1482	202					
142	1.49	95.95	2.50	71.44	1481	204					
144	1.48	98.78	2.58	72.03	1481	206					
146	1.51	92.70	2.42	70.74	1482	208	1.45	110.81	2.89	74.29	
148	1.50	93.16	2.43	70.84	1481	210	1.46	106.81	2.79	73.58	
150	1.46	108.11	2.82	73.81	1481	212	1.46	107.97	2.82	73.79	
152	1.50	93.64	2.44	70.94	1481	214	1.47	102.95	2.68	72.86	
154	1.53	85.75	2.24	69.10	1484	216	1.46	107.03	2.79	73.62	
156	1.47	101.76	2.65	72.63	1483	218	1.47	102.10	2.66	72.69	
158	1.49	97.71	2.55	71.81	1480	220	1.51	91.79	2.39	70.53	
160	1.48	99.06	2.58	72.09	1482	222	1.50	95.34	2.49	71.31	
162	1.49	97.68	2.55	71.81	1481	224	1.49	95.94	2.50	71.44	
164	1.50	93.30	2.43	70.87	1480	226	1.48	98.83	2.58	72.04	
166	1.49	97.50	2.54	71.77	1479	228	1.47	104.45	2.72	73.14	
168	1.49	98.01	2.56	71.87	1480	230	1.46	105.40	2.75	73.32	1474
170	1.51	91.12	2.38	70.38	1481	232	1.46	107.28	2.80	73.67	1484
172	1.50	93.30	2.43	70.87	1480	234	1.52	87.81	2.29	69.60	1485
174	1.50	93.16	2.43	70.84	1480	236	1.50	93.52	2.44	70.92	1483
176	1.49	97.46	2.54	71.76	1479	238	1.47	102.16	2.66	72.71	1479
178	1.47	103.40	2.70	72.94	1480	240	1.49	97.55	2.54	71.78	1479
180	1.49	96.17	2.51	71.49	1481	242	1.52	90.11	2.35	70.15	1481
182	1.50	94.03	2.45	71.03	1481	244	1.54	83.35	2.17	68.49	1483

# HM 16

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.50	93.03	2.43	70.81	1480
248	1.51	90.75	2.37	70.29	1481
250	1.52	89.43	2.33	69.99	1481
252	1.50	94.80	2.47	71.20	1480
254	1.50	93.71	2.44	70.96	1481
256	1.52	89.39	2.33	69.98	1481
258	1.50	95.23	2.48	71.29	1481
260	1.52	87.79	2.29	69.60	1482
262	1.51	90.95	2.37	70.34	1481
264	1.51	90.87	2.37	70.32	1481
266	1.53	86.20	2.25	69.21	1483
268	1.55	82.21	2.14	68.19	1482
270	1.55	82.58	2.15	68.29	1484
272	1.55	81.69	2.13	68.05	1485
274	1.57	76.26	1.99	66.54	1486
276	1.58	74.87	1.95	66.13	1488
278	1.59	72.54	1.89	65.42	1488
280	1.60	72.19	1.88	65.31	1487
282	1.61	69.32	1.81	64.38	1490
284	1.61	69.12	1.80	64.32	1487
286	1.59	73.93	1.93	65.84	
288	1.62	67.86	1.77	63.89	1511
290	1.65	62.16	1.62	61.84	

## HM 17

## HM 17

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						62	1.50	92.99	2.42	70.80	1479
2						64	1.47	101.93	2.66	72.66	1481
4						66	1.51	90.96	2.37	70.34	1484
6						68	1.54	84.74	2.21	68.84	1486
8						70	1.52	87.89	2.29	69.62	1491
10						72	1.49	98.55	2.57	71.99	1479
12						74	1.48	99.28	2.59	72.13	1478
14						76	1.50	94.72	2.47	71.18	1479
16	1.40	131.16	3.42	77.37		78	1.49	98.20	2.56	71.91	1477
18	1.41	126.16	3.29	76.69		80	1.47	102.26	2.67	72.72	1479
20	1.40	128.17	3.34	76.97		82	1.47	102.99	2.69	72.87	1479
22	1.44	113.47	2.96	74.74		84	1.48	99.66	2.60	72.21	1479
24	1.42	120.77	3.15	75.90		86	1.48	101.33	2.64	72.54	1479
26	1.41	124.50	3.25	76.45		88	1.49	97.57	2.54	71.78	1478
28	1.43	115.34	3.01	75.05		90	1.48	100.76	2.63	72.43	1478
30	1.53	87.05	2.27	69.42		92	1.45	110.37	2.88	74.21	1481
32	1.48	101.05	2.63	72.49		94	1.49	97.89	2.55	71.85	1481
34	1.44	114.70	2.99	74.94		96	1.51	91.67	2.39	70.50	1482
36	1.42	120.58	3.14	75.87		98	1.47	103.90	2.71	73.04	1479
38	1.44	115.24	3.00	75.03		100	1.47	103.06	2.69	72.88	1478
40	1.44	111.92	2.92	74.48	1490	102					
42	1.46	106.63	2.78	73.55	1491	104					
44	1.49	95.92	2.50	71.44	1484	106	1.36	148.09	3.86	79.43	
46	1.48	98.63	2.57	72.00	1485	108	1.47	102.13	2.66	72.70	
48	1.40	129.80	3.38	77.19	1485	110	1.48	98.75	2.57	72.03	
50	1.47	102.31	2.67	72.73	1485	112	1.49	98.12	2.56	71.90	
52	1.48	98.96	2.58	72.07	1481	114	1.49	97.94	2.55	71.86	
54	1.49	97.76	2.55	71.82	1479	116	1.48	100.86	2.63	72.45	
56	1.48	99.47	2.59	72.17	1479	118	1.53	86.99	2.27	69.40	1492
58	1.46	107.12	2.79	73.64	1483	120	1.55	80.99	2.11	67.86	1488
60	1.49	95.82	2.50	71.42	1479	122	1.50	93.56	2.44	70.93	1475

## HM 17

## HM 17

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
124	1.55	81.96	2.14	68.12	1481	184	1.64	63.85	1.66	62.48	1486
126	1.53	85.84	2.24	69.12	1481	186	1.67	60.02	1.57	61.01	1495
128	1.57	77.46	2.02	66.88	1482	188	1.66	60.14	1.57	61.06	1494
130	1.55	80.89	2.11	67.84	1483	190	1.66	61.63	1.61	61.64	1492
132	1.58	75.40	1.97	66.28	1483	192	1.66	60.79	1.59	61.32	1493
134	1.61	69.18	1.80	64.33	1486	194	1.66	60.86	1.59	61.34	1494
136	1.59	73.06	1.90	65.58	1486	196	1.71	53.98	1.41	58.46	1502
138	1.61	70.11	1.83	64.64	1488	198	1.71	54.27	1.42	58.59	1501
140	1.60	71.88	1.87	65.21	1490	200	1.70	55.37	1.44	59.08	1500
142	1.63	65.27	1.70	62.99	1494	202	1.68	57.72	1.51	60.08	1500
144	1.65	63.22	1.65	62.24	1494	204	1.67	59.60	1.55	60.85	1498
146	1.65	63.15	1.65	62.22	1490	206	1.66	60.99	1.59	61.39	
148	1.62	67.41	1.76	63.74	1491						
150	1.61	69.72	1.82	64.51	1491						
152	1.62	67.24	1.75	63.68	1495						
154	1.58	75.31	1.96	66.26	1484						
156	1.59	73.01	1.90	65.56	1487						
158	1.62	67.00	1.75	63.60	1489						
160	1.64	64.63	1.69	62.76	1493						
162	1.61	68.49	1.79	64.10	1493						
164	1.65	62.70	1.63	62.05	1506						
166	1.70	54.52	1.42	58.71	1507						
168	1.71	54.17	1.41	58.55	1511						
170	1.68	58.18	1.52	60.27	1509						
172	1.69	56.08	1.46	59.39	1512						
174	1.67	59.35	1.55	60.74	1502						
176	1.63	66.01	1.72	63.25	1495						
178	1.66	61.37	1.60	61.54	1496						
180	1.66	60.23	1.57	61.09	1502						
182	1.69	56.44	1.47	59.54	1494						

## HM 19

## HM 19

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.62	67.22	1.75	63.67	1492
2						62	1.59	72.77	1.90	65.49	1482
4						64	1.54	84.61	2.21	68.81	1476
6						66	1.55	82.65	2.16	68.31	1474
8						68	1.57	76.57	2.00	66.63	1476
10					1493	70	1.59	72.83	1.90	65.51	1478
12	1.47	102.92	2.68	72.85	1488	72	1.59	73.38	1.91	65.68	1480
14	1.50	94.01	2.45	71.02	1486	74	1.61	70.17	1.83	64.66	1479
16	1.62	67.73	1.77	63.85	1496	76	1.57	76.23	1.99	66.53	1478
18	1.45	108.50	2.83	73.88	1484	78	1.56	79.42	2.07	67.43	1478
20	1.48	98.90	2.58	72.06	1484	80	1.55	81.01	2.11	67.87	1477
22	1.49	97.20	2.53	71.71	1483	82	1.58	74.87	1.95	66.13	1478
24	1.48	100.00	2.61	72.28	1481	84	1.59	73.72	1.92	65.78	1478
26	1.46	107.35	2.80	73.68	1480	86	1.58	74.98	1.96	66.16	1478
28	1.41	124.60	3.25	76.46	1477	88	1.68	58.04	1.51	60.21	1498
30	1.49	96.64	2.52	71.59	1479	90	1.56	79.76	2.08	67.53	1476
32	1.57	76.63	2.00	66.65	1486	92	1.70	54.42	1.42	58.66	1485
34	1.61	69.52	1.81	64.45	1492	94	1.65	61.73	1.61	61.68	1495
36	1.67	59.28	1.55	60.72	1502	96	1.71	54.33	1.42	58.62	1500
38	1.72	52.52	1.37	57.79	1509	98	1.64	63.78	1.66	62.45	1491
40	1.72	51.79	1.35	57.46	1510	100	1.77	45.93	1.20	54.50	1521
42	1.68	58.53	1.53	60.41	1502	102	1.66	60.47	1.58	61.19	1521
44	1.69	56.77	1.48	59.68	1503	104	1.71	53.39	1.39	58.19	
46	1.69	55.91	1.46	59.32	1501	106					
48	1.69	56.00	1.46	59.35	1493	108					
50	1.80	43.16	1.13	52.95	1547	110	1.67	59.14	1.54	60.66	
52	1.70	54.51	1.42	58.70	1518	112	1.66	61.69	1.61	61.66	
54	1.68	58.55	1.53	60.42	1511	114	1.63	66.40	1.73	63.39	
56	1.70	55.60	1.45	59.18	1506	116	1.67	58.87	1.54	60.55	
58	1.66	60.55	1.58	61.22	1497	118	1.72	52.90	1.38	57.97	
	1.67	58.69	1.53	60.48	1494	120	1.72	52.58	1.37	57.82	

## HM 19

## HM 19

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.69	56.21	1.47	59.44		184	1.85	38.00	0.99	49.77	1530
124	1.69	55.87	1.46	59.30		186	1.86	37.17	0.97	49.22	1529
126	1.68	57.47	1.50	59.98		188	1.81	41.75	1.09	52.12	1520
128	1.68	57.55	1.50	60.01		190	1.80	43.05	1.12	52.89	1519
130	1.67	59.55	1.55	60.83		192	1.81	41.49	1.08	51.97	1521
132	1.67	59.28	1.55	60.72		194	1.93	31.25	0.81	44.90	1569
134	1.67	59.46	1.55	60.79	1487	196	1.95	30.18	0.79	44.04	
136	1.67	59.72	1.56	60.90	1486	198	2.01	25.41	0.66	39.85	1521
138	1.67	59.50	1.55	60.81	1488	200	1.97	28.56	0.74	42.68	
140	1.70	55.16	1.44	58.99	1500						
142	1.79	43.80	1.14	53.31	1516						
144	1.71	53.40	1.39	58.20	1502						
146	1.67	58.73	1.53	60.50	1491						
148	1.73	51.25	1.34	57.20	1498						
150	1.89	34.39	0.90	47.27	1557						
152	1.93	31.04	0.81	44.73	1572						
154	2.13	18.49	0.48	32.53	1663						
156	2.16	17.26	0.45	31.04	1675						
158	2.17	16.58	0.43	30.19	1680						
160	2.18	16.36	0.43	29.91	1686						
162	2.17	16.92	0.44	30.61	1685						
164	2.20	15.29	0.40	28.50	1687						
166	2.19	15.78	0.41	29.15	1685						
168	2.17	16.54	0.43	30.14	1698						
170	2.17	16.66	0.43	30.29	1697						
172	2.06	22.74	0.59	37.22	1695						
174	1.83	39.60	1.03	50.80	1538						
176	1.83	39.87	1.04	50.97	1527						
178	1.83	39.61	1.03	50.80	1525						
180	1.84	38.62	1.01	50.18	1526						
182	1.83	40.19	1.05	51.17	1527						



## HM 29

## HM 29

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.49	96.48	2.52	71.56	1490
2						62	1.50	94.75	2.47	71.19	1490
4						64	1.48	100.38	2.62	72.36	1487
6						66	1.48	100.03	2.61	72.28	1486
8	1.48	100.48	2.62	72.37		68	1.45	108.32	2.82	73.85	1485
10	1.49	98.19	2.56	71.91	1492	70	1.47	102.97	2.68	72.86	1485
12	1.48	100.80	2.63	72.44	1490	72	1.48	99.26	2.59	72.13	1484
14	1.48	99.35	2.59	72.15	1490	74	1.46	107.88	2.81	73.77	1483
16	1.44	113.50	2.96	74.74	1490	76	1.42	120.21	3.13	75.81	1484
18	1.47	104.18	2.72	73.09	1491	78	1.43	116.94	3.05	75.30	1485
20	1.46	107.34	2.80	73.68	1493	80	1.41	123.97	3.23	76.37	1486
22	1.48	100.65	2.62	72.41	1494	82	1.45	109.89	2.87	74.13	1486
24	1.46	108.01	2.82	73.80	1494	84	1.45	108.69	2.83	73.92	1486
26	1.46	107.30	2.80	73.67	1492	86	1.45	108.51	2.83	73.89	1488
28	1.48	99.47	2.59	72.17	1490	88	1.47	103.39	2.70	72.94	1485
30	1.46	106.06	2.77	73.44	1488	90	1.46	105.51	2.75	73.34	1485
32	1.45	108.53	2.83	73.89	1488	92	1.51	92.73	2.42	70.74	1486
34	1.43	115.51	3.01	75.07	1487	94	1.49	97.59	2.54	71.79	1485
36	1.47	103.69	2.70	73.00	1487	96					
38	1.50	94.27	2.46	71.08	1489	98	1.49	96.13	2.51	71.48	1510
40	1.48	99.78	2.60	72.23	1489	100					
42	1.48	101.33	2.64	72.54	1490	102					
44	1.49	97.26	2.54	71.72	1492	104					
46	1.46	107.82	2.81	73.76	1492	106					
48	1.50	95.60	2.49	71.37	1492	108					
50	1.45	108.95	2.84	73.96	1490	110					
52	1.48	99.17	2.59	72.11	1487	112	1.50	94.33	2.46	71.10	
54	1.47	103.49	2.70	72.96	1487	114					
56	1.48	101.39	2.64	72.56	1487	116	1.54	84.33	2.20	68.74	
58	1.45	108.26	2.82	73.84	1492	118	1.57	76.37	1.99	66.57	
						120	1.62	67.34	1.76	63.71	

## HM 29

## HM 29

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.61	70.04	1.83	64.62		184	1.89	34.40	0.90	47.29	1559
124	1.64	63.69	1.66	62.42		186	1.91	32.54	0.85	45.90	1558
126	1.69	56.53	1.47	59.58		188	1.87	36.66	0.96	48.87	1557
128	1.68	58.56	1.53	60.43	1502	190	1.82	40.55	1.06	51.40	1541
130	1.68	57.68	1.50	60.06	1504	192	1.82	40.70	1.06	51.48	
132	1.64	64.40	1.68	62.67	1497	194	1.80	43.22	1.13	52.99	
134	1.69	56.75	1.48	59.67	1500	196	1.83	40.44	1.05	51.32	1568
136	1.69	56.25	1.47	59.46	1497	198					1574
138	1.69	56.34	1.47	59.50	1499						
140	1.73	50.76	1.32	56.96	1514						
142	1.79	43.97	1.15	53.41	1524						
144	1.80	43.46	1.13	53.12	1524						
146	1.74	50.21	1.31	56.69	1503						
148	1.75	48.35	1.26	55.77	1510						
150	1.79	44.33	1.16	53.61	1515						
152	1.73	50.75	1.32	56.96	1506						
154	1.72	52.15	1.36	57.62	1513						
156	1.73	50.48	1.32	56.83	1510						
158	1.78	45.35	1.18	54.18	1518						
160	1.77	46.04	1.20	54.55	1517						
162	1.77	46.42	1.21	54.76	1516						
164	1.79	43.70	1.14	53.26	1519						
166	1.83	39.92	1.04	51.00	1523						
168	1.82	40.48	1.06	51.35	1529						
170	1.87	36.70	0.96	48.90	1550						
172	1.85	37.99	0.99	49.76	1550						
174	1.85	37.89	0.99	49.70	1549						
176	1.89	34.14	0.89	47.10	1556						
178	1.89	34.54	0.90	47.39	1557						
180	1.87	36.42	0.95	48.71	1555						
182	1.89	34.20	0.89	47.14	1559						

## HM 31

## HM 31

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.52	89.94	2.35	70.11	1490
2						62	1.54	85.15	2.22	68.95	1489
4						64	1.52	87.73	2.29	69.58	1490
6						66	1.51	92.02	2.40	70.58	1489
8						68	1.49	97.66	2.55	71.80	1493
10						70	1.51	91.48	2.39	70.46	1491
12						72	1.50	93.05	2.43	70.81	1501
14	1.40	130.71	3.41	77.32		74	1.48	98.90	2.58	72.06	1505
16	1.38	139.40	3.63	78.42		76	1.51	90.62	2.36	70.26	1505
18						78	1.50	95.36	2.49	71.32	1506
20	1.46	105.31	2.75	73.30		80	1.49	97.74	2.55	71.82	1509
22	1.46	105.52	2.75	73.34		82	1.52	89.75	2.34	70.06	1506
24	1.49	95.84	2.50	71.42		84	1.53	87.26	2.28	69.47	1498
26	1.46	105.90	2.76	73.41		86	1.52	89.82	2.34	70.08	1499
28	1.42	121.59	3.17	76.02		88	1.47	103.75	2.71	73.01	1492
30	1.46	107.67	2.81	73.74	1491	90	1.49	97.30	2.54	71.73	1499
32	1.47	102.05	2.66	72.68	1494	92	1.54	83.68	2.18	68.57	1509
34	1.48	99.74	2.60	72.23	1494	94	1.48	100.15	2.61	72.31	1466
36	1.46	107.45	2.80	73.70	1500	96	1.43	117.85	3.07	75.45	
38	1.50	95.45	2.49	71.34	1494	98	1.52	89.66	2.34	70.04	1472
40	1.48	100.17	2.61	72.31	1490	100	1.51	91.07	2.37	70.37	
42	1.49	97.90	2.55	71.85	1490	102	1.36	146.97	3.83	79.31	
44	1.45	108.44	2.83	73.87	1497	104	1.36	149.54	3.90	79.59	
46	1.47	103.18	2.69	72.90	1499	106	1.41	125.93	3.28	76.65	
48	1.47	103.85	2.71	73.03	1502	108	1.34	161.33	4.21	80.79	
50	1.50	94.29	2.46	71.09	1488	110					
52	1.49	97.66	2.55	71.80	1484	112	1.33	167.50	4.37	81.37	
54	1.50	93.10	2.43	70.83	1484	114	1.42	120.99	3.15	75.93	
56	1.48	99.24	2.59	72.13	1486	116	1.42	119.10	3.11	75.64	
58	1.51	91.85	2.39	70.54	1485	118	1.40	129.12	3.37	77.10	
						120					

## HM 31

## HM 31

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.46	107.61	2.81	73.72		184	1.50	94.01	2.45	71.03	1483
124	1.46	107.04	2.79	73.62		186	1.50	94.08	2.45	71.04	1485
126	1.45	111.24	2.90	74.36		188	1.50	93.16	2.43	70.84	1484
128	1.42	120.49	3.14	75.86		190	1.52	89.01	2.32	69.89	1485
130	1.41	126.95	3.31	76.80		192					
132	1.45	109.40	2.85	74.04		194	1.53	85.87	2.24	69.13	1511
134	1.47	103.76	2.71	73.01		196	1.55	81.77	2.13	68.07	1511
136	1.48	101.01	2.63	72.48		198					
138	1.46	105.09	2.74	73.26		200					
140	1.49	95.94	2.50	71.44		202					
142	1.50	93.88	2.45	71.00		204					
144	1.51	91.55	2.39	70.48	1484	206					
146	1.49	97.08	2.53	71.68	1473	208	1.45	108.12	2.82	73.82	
148	1.52	89.60	2.34	70.03	1480	210	1.48	101.31	2.64	72.54	
150	1.50	95.29	2.48	71.30	1484	212	1.52	88.77	2.31	69.83	
152	1.50	92.95	2.42	70.79	1483	214	1.54	84.74	2.21	68.84	
154	1.54	84.52	2.20	68.79	1485	216	1.52	89.84	2.34	70.08	
156	1.52	87.78	2.29	69.59	1485	218	1.55	82.42	2.15	68.24	
158	1.52	89.83	2.34	70.08	1486	220	1.55	81.06	2.11	67.88	1486
160	1.48	100.40	2.62	72.36	1486	222	1.52	89.76	2.34	70.06	1485
162	1.52	89.73	2.34	70.06	1483	224	1.50	93.02	2.43	70.81	1483
164	1.52	89.03	2.32	69.89	1484	226	1.50	92.91	2.42	70.78	1485
166	1.53	86.17	2.25	69.20	1484	228	1.52	89.17	2.32	69.92	1485
168	1.51	90.46	2.36	70.23	1483	230	1.51	90.64	2.36	70.27	1485
170	1.52	89.15	2.32	69.92	1483	232	1.50	94.50	2.46	71.13	1484
172	1.51	92.82	2.42	70.76	1484	234	1.51	91.70	2.39	70.51	1484
174	1.52	88.41	2.31	69.74	1484	236	1.50	94.67	2.47	71.17	1482
176	1.52	89.06	2.32	69.90	1485	238	1.48	99.11	2.58	72.10	1482
178	1.50	95.48	2.49	71.34	1483	240	1.50	94.95	2.48	71.23	1483
180	1.51	91.54	2.39	70.47	1483	242	1.51	90.39	2.36	70.21	1485
182	1.51	91.92	2.40	70.56	1483	244	1.51	91.85	2.39	70.54	1483

# HM 31

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.52	89.81	2.34	70.08	1484
248	1.51	90.23	2.35	70.17	1483
250	1.50	93.13	2.43	70.83	1483
252	1.49	97.69	2.55	71.81	1482
254	1.50	92.96	2.42	70.79	1484
256	1.51	92.21	2.40	70.62	1484
258	1.53	86.51	2.26	69.28	1485
260	1.51	92.27	2.41	70.64	1483
262	1.49	95.90	2.50	71.43	1484
264	1.50	93.81	2.45	70.98	1484
266	1.47	101.67	2.65	72.61	1482
268	1.49	97.58	2.54	71.79	1483
270	1.52	88.79	2.32	69.83	1484
272	1.50	94.63	2.47	71.16	1482
274	1.48	99.54	2.60	72.19	1481
276	1.51	91.65	2.39	70.50	1482
278	1.51	90.75	2.37	70.29	1484
280	1.53	86.79	2.26	69.35	1484
282	1.51	92.02	2.40	70.58	1484
284	1.47	104.17	2.72	73.09	1482
286	1.50	93.68	2.44	70.95	1484
288	1.52	87.96	2.29	69.64	1486
290	1.50	94.73	2.47	71.18	1484
292	1.48	101.16	2.64	72.51	1483
294	1.47	104.64	2.73	73.18	1481
296	1.41	124.16	3.24	76.40	
298	1.49	97.36	2.54	71.74	1500

## HM 32

## HM 32

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.77	46.56	1.21	54.83	1526
2						62	1.82	40.72	1.06	51.50	1559
4						64	1.84	39.14	1.02	50.51	1550
6						66	1.87	36.39	0.95	48.69	1556
8						68	1.84	38.68	1.01	50.21	1557
10						70	1.87	36.04	0.94	48.45	1553
12						72	1.86	36.97	0.96	49.09	1556
14						74	1.88	35.38	0.92	47.99	1557
16						76	1.89	34.50	0.90	47.35	1558
18					1492	78	1.87	36.35	0.95	48.66	1557
20	1.52	88.97	2.32	69.88	1502	80	1.88	35.10	0.92	47.79	1558
22	1.51	92.36	2.41	70.66	1501	82	1.88	35.29	0.92	47.92	1560
24	1.62	67.65	1.76	63.82	1508	84	1.90	33.70	0.88	46.77	1559
26	1.70	55.44	1.45	59.11	1516	86	2.00	26.03	0.68	40.43	1556
28	1.71	53.61	1.40	58.29	1518	88	1.83	40.31	1.05	51.25	
30	1.89	34.19	0.89	47.13	1591	90	1.85	38.02	0.99	49.78	1548
32	1.91	32.98	0.86	46.24	1574	92	1.73	51.27	1.34	57.21	
34	1.86	37.37	0.97	49.35	1564						
36	1.79	44.06	1.15	53.46	1532						
38	1.73	50.77	1.32	56.97	1517						
40	1.74	49.80	1.30	56.50	1550						
42	1.63	64.97	1.69	62.88	1492						
44	1.64	63.85	1.66	62.47	1495						
46	1.57	76.26	1.99	66.54	1488						
48	1.62	67.73	1.77	63.85	1488						
50	1.74	49.95	1.30	56.57	1516						
52	1.73	51.64	1.35	57.38	1516						
54	1.72	52.53	1.37	57.80	1516						
56	1.76	47.12	1.23	55.13	1522						
58	1.75	48.29	1.26	55.74	1523						

## HM 34

## HM 34

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.78	45.09	1.18	54.03	1529
2						62	1.81	41.62	1.09	52.04	1529
4						64	1.83	40.33	1.05	51.25	1553
6						66	1.85	37.94	0.99	49.73	1558
8						68	1.83	39.97	1.04	51.03	1544
10						70	1.90	34.06	0.89	47.04	1552
12						72	1.88	35.51	0.93	48.08	1552
14	1.48	99.19	2.59	72.12		74	1.90	33.74	0.88	46.80	1554
16	1.49	97.06	2.53	71.68		76	1.87	35.86	0.93	48.32	1555
18	1.52	88.96	2.32	69.88		78	1.86	36.81	0.96	48.97	1555
20	1.49	98.51	2.57	71.98		80	1.91	33.16	0.86	46.37	1553
22	1.59	74.01	1.93	65.87		82	1.88	35.68	0.93	48.20	1556
24	1.68	58.50	1.53	60.40		84	1.90	33.67	0.88	46.75	1557
26	1.69	56.79	1.48	59.69		86	1.89	34.40	0.90	47.28	1557
28	1.76	47.70	1.24	55.43		88	1.92	32.31	0.84	45.72	1557
30	1.71	54.14	1.41	58.53		90	1.92	32.03	0.84	45.51	1557
32	1.69	56.63	1.48	59.62	1475	92	1.89	34.27	0.89	47.19	1559
34	1.69	56.43	1.47	59.54	1513	94	1.90	33.51	0.87	46.63	1557
36	1.75	49.15	1.28	56.17	1519	96	1.93	31.33	0.82	44.96	1555
38	1.83	39.64	1.03	50.83		98	1.90	33.59	0.88	46.69	1557
40	1.73	51.48	1.34	57.30	1508	100	1.88	35.68	0.93	48.19	1558
42	1.67	59.36	1.55	60.75	1498	102	1.90	34.07	0.89	47.05	1557
44	1.64	64.49	1.68	62.71	1494	104	1.90	33.56	0.87	46.66	1559
46	1.69	56.48	1.47	59.56	1506	106	1.90	33.54	0.87	46.65	1560
48	1.69	56.10	1.46	59.39	1507	108	1.90	33.66	0.88	46.74	1560
50	1.72	52.63	1.37	57.85	1513	110	1.90	34.03	0.89	47.02	1559
52	1.76	46.95	1.22	55.04	1527	112	1.91	32.67	0.85	46.00	1560
54	1.79	44.25	1.15	53.57	1528	114	1.91	32.85	0.86	46.14	1566
56	1.76	47.52	1.24	55.34	1523	116					
58	1.75	48.24	1.26	55.71	1524	118					1552
						120					1542

## HM 36

## HM 36

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.74	49.40	1.29	56.30	1512
2						62	1.73	51.39	1.34	57.26	1509
4	1.64	64.83	1.69	62.83		64	1.75	49.16	1.28	56.18	1513
6	1.62	67.67	1.76	63.83		66	1.77	46.02	1.20	54.55	1509
8	1.66	61.09	1.59	61.43		68	1.79	43.96	1.15	53.41	1526
10	1.71	53.06	1.38	58.04		70	1.74	50.33	1.31	56.75	1514
12	1.67	60.12	1.57	61.05		72	1.72	52.92	1.38	57.98	1507
14	1.68	57.90	1.51	60.15	1450	74	1.75	48.95	1.28	56.07	1511
16	1.72	52.47	1.37	57.77		76	1.73	50.67	1.32	56.92	1508
18	1.70	54.67	1.43	58.77		78	1.75	48.49	1.26	55.84	1511
20	1.70	55.27	1.44	59.04		80	1.77	46.69	1.22	54.90	1517
22	1.70	55.51	1.45	59.14		82	1.65	62.91	1.64	62.13	1524
24	1.71	53.89	1.41	58.42		84	1.66	60.99	1.59	61.39	1486
26	1.68	58.41	1.52	60.36		86	1.69	56.23	1.47	59.45	
28	1.69	55.93	1.46	59.32		88	1.71	53.43	1.39	58.22	
30	1.65	63.09	1.65	62.19		90	1.70	55.15	1.44	58.98	1527
32	1.71	53.77	1.40	58.37		92	1.73	51.66	1.35	57.39	
34	1.68	57.84	1.51	60.13		94	1.81	42.45	1.11	52.54	1572
36	1.68	57.70	1.50	60.07	1490	96	1.77	46.48	1.21	54.79	
38	1.71	53.11	1.38	58.07	1507						
40	1.69	57.10	1.49	59.82	1502						
42	1.71	53.81	1.40	58.39	1505						
44	1.75	49.14	1.28	56.16	1512						
46	1.73	50.88	1.33	57.02	1504						
48	1.71	54.23	1.41	58.58	1501						
50	1.75	48.18	1.26	55.68	1512						
52	1.72	51.96	1.35	57.53	1515						
54	1.74	50.27	1.31	56.72	1517						
56	1.78	44.65	1.16	53.79	1515						
58	1.77	46.60	1.22	54.86	1520						



## HM 37

## HM 37

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.85	37.77	0.98	49.62	1548
2						62	1.86	37.29	0.97	49.30	1549
4						64	1.89	34.18	0.89	47.12	1551
6						66	1.86	36.94	0.96	49.07	1555
8	1.56	79.95	2.08	67.58	1507	68	1.90	33.86	0.88	46.89	1556
10	1.54	84.41	2.20	68.76	1500	70	1.87	36.55	0.95	48.80	1551
12	1.53	86.78	2.26	69.35	1491	72	1.86	37.14	0.97	49.20	1551
14	1.55	82.38	2.15	68.23	1495	74	1.88	35.80	0.93	48.28	1554
16	1.56	79.25	2.07	67.39	1500	76	1.89	34.18	0.89	47.13	1552
18	1.64	64.41	1.68	62.68	1504	78	1.88	35.33	0.92	47.95	1551
20	1.69	55.95	1.46	59.33	1515	80	1.90	33.44	0.87	46.58	1550
22	1.72	52.53	1.37	57.80	1514	82	1.90	33.95	0.89	46.95	1549
24	1.72	52.90	1.38	57.97	1510	84	1.88	35.57	0.93	48.12	1556
26	1.71	54.27	1.41	58.59	1509	86	1.90	33.54	0.87	46.65	1550
28	1.72	52.69	1.37	57.88	1515	88	1.88	35.65	0.93	48.17	1554
30	1.69	55.74	1.45	59.24	1514	90	1.87	35.85	0.93	48.31	1554
32	1.73	50.62	1.32	56.89	1516	92	1.86	37.04	0.97	49.13	1551
34	1.65	62.99	1.64	62.16	1496	94	1.83	40.24	1.05	51.20	
36	1.67	59.27	1.55	60.71	1499	96	1.79	43.64	1.14	53.23	
38	1.67	59.75	1.56	60.91	1494	98	1.91	32.55	0.85	45.91	
40	1.65	62.66	1.63	62.03	1491	100					
42	1.77	46.72	1.22	54.92	1532	102					
44	1.77	46.31	1.21	54.70	1516	104	1.91	32.54	0.85	45.90	1570
46	1.76	47.58	1.24	55.37	1521	106	1.93	31.59	0.82	45.16	1571
48	1.74	49.25	1.28	56.22	1516	108	1.88	35.63	0.93	48.16	1565
50	1.74	49.49	1.29	56.34	1520	110	1.91	33.05	0.86	46.28	1566
52	1.77	45.91	1.20	54.48	1520	112	1.85	37.65	0.98	49.54	1552
54	1.83	40.17	1.05	51.16	1556	114	1.89	34.48	0.90	47.34	1560
56	1.86	37.37	0.97	49.35	1554	116	1.88	35.14	0.92	47.82	1556
58	1.84	38.63	1.01	50.18	1549	118	1.88	35.43	0.92	48.02	1554
						120	1.91	32.79	0.86	46.09	1552

## HM 37

## HM 37

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.89	34.30	0.89	47.21	1556	184	1.91	32.91	0.86	46.18	1560
124	1.90	34.12	0.89	47.08	1553	186	1.91	32.63	0.85	45.97	1561
126	1.90	33.94	0.88	46.95	1555	188	1.93	31.24	0.81	44.89	1561
128	1.89	34.43	0.90	47.31	1559	190	1.96	29.24	0.76	43.26	1560
130	1.96	28.87	0.75	42.95		192	1.95	29.96	0.78	43.86	1560
132	1.88	35.16	0.92	47.83	1555	194	1.93	31.03	0.81	44.72	1565
134	1.93	31.01	0.81	44.71	1551	196	1.93	31.43	0.82	45.04	1565
136	1.89	34.59	0.90	47.42	1555	198	1.94	30.64	0.80	44.41	1567
138	1.89	34.33	0.90	47.24	1555	200	1.94	30.70	0.80	44.46	1567
140	1.91	33.12	0.86	46.34	1553	202	1.94	30.68	0.80	44.45	1569
142	1.90	33.95	0.89	46.95	1554	204	1.94	30.37	0.79	44.19	1568
144	1.92	32.47	0.85	45.84	1555	206	1.96	28.81	0.75	42.90	1569
146	1.91	32.68	0.85	46.01	1557	208	1.98	27.50	0.72	41.76	1568
148	1.93	31.64	0.82	45.20	1557	210	1.91	32.51	0.85	45.88	1572
150	1.92	32.44	0.85	45.82	1561	212	1.95	29.99	0.78	43.89	1566
152	1.92	32.14	0.84	45.60	1559	214	1.95	29.62	0.77	43.58	1575
154	1.92	31.88	0.83	45.39	1559	216	1.95	29.86	0.78	43.78	1579
156	1.94	30.89	0.81	44.61	1559	218	1.95	30.17	0.79	44.03	
158	1.92	32.14	0.84	45.59	1557	220	1.92	32.47	0.85	45.85	
160	1.92	31.84	0.83	45.36	1562	222	1.88	35.82	0.93	48.29	
162	1.91	32.85	0.86	46.14	1557	224	1.97	28.58	0.75	42.70	
164	1.92	32.41	0.85	45.80	1558	226	2.02	25.02	0.65	39.48	
166	1.92	32.23	0.84	45.66	1559						
168	1.91	33.17	0.86	46.38	1562						
170	1.93	31.58	0.82	45.16	1560						
172	1.89	34.27	0.89	47.19	1560						
174	1.90	34.04	0.89	47.02	1562						
176	1.94	30.44	0.79	44.25	1559						
178	1.92	31.87	0.83	45.39	1562						
180	1.91	32.93	0.86	46.19	1563						
182	1.92	31.89	0.83	45.40	1559						

## HM 38

## HM 38

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.87	36.15	0.94	48.52	1557
2						62	1.67	59.26	1.55	60.71	1513
4						64	1.76	47.17	1.23	55.16	1525
6						66	1.74	50.39	1.31	56.78	1522
8						68	1.77	46.72	1.22	54.92	1523
10					1503	70	1.74	49.33	1.29	56.26	1524
12					1497	72	1.76	46.86	1.22	54.99	1528
14	1.48	101.52	2.65	72.58	1491	74	1.82	41.45	1.08	51.94	1546
16	1.48	98.85	2.58	72.05	1493	76	1.84	39.07	1.02	50.46	1543
18	1.53	86.57	2.26	69.30	1496	78	1.82	41.18	1.07	51.78	1544
20	1.59	72.37	1.89	65.36	1505	80	1.84	39.10	1.02	50.48	1548
22	1.63	65.12	1.70	62.94	1512	82	1.85	38.16	1.00	49.88	1547
24	1.65	62.98	1.64	62.15	1511	84	1.85	38.15	0.99	49.87	1548
26	1.68	57.40	1.50	59.94	1509	86	1.84	38.68	1.01	50.21	1550
28	1.65	61.89	1.61	61.74	1510	88	1.84	39.10	1.02	50.48	1551
30	1.64	64.00	1.67	62.53	1508	90	1.87	36.39	0.95	48.68	1552
32	1.69	56.39	1.47	59.52	1519	92	1.85	37.62	0.98	49.52	1553
34	1.65	63.12	1.65	62.20	1507	94	1.79	43.93	1.15	53.39	
36	1.65	61.91	1.61	61.75	1502	96	1.84	39.01	1.02	50.43	
38	1.66	61.28	1.60	61.51	1503	98	1.91	33.14	0.86	46.35	1547
40	1.64	64.09	1.67	62.56	1499	100					
42	1.60	71.98	1.88	65.24	1488	102	1.82	41.36	1.08	51.88	
44	1.61	69.58	1.81	64.47	1490	104	1.79	43.98	1.15	53.42	
46	1.85	37.71	0.98	49.57	1551	106	1.86	37.31	0.97	49.31	
48	1.87	36.27	0.95	48.60	1550	108	1.88	35.43	0.92	48.02	
50	1.83	40.28	1.05	51.22	1544	110	1.92	31.91	0.83	45.42	
52	1.78	45.00	1.17	53.99	1536	112	1.86	36.82	0.96	48.98	1427
54	1.82	41.45	1.08	51.94	1547	114	1.85	38.42	1.00	50.05	1559
56	1.93	31.14	0.81	44.81	1586	116	1.87	36.42	0.95	48.71	1561
58	1.92	31.98	0.83	45.47	1571	118	1.85	38.01	0.99	49.77	1559

## HM 38

## HM 38

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.86	37.35	0.97	49.34	1557	184	1.88	35.56	0.93	48.11	1558
124	1.85	37.89	0.99	49.70	1555	186	1.87	36.24	0.95	48.59	1558
126	1.86	37.08	0.97	49.16	1553	188	1.87	36.17	0.94	48.54	1560
128	1.85	38.06	0.99	49.81	1552	190	1.85	37.71	0.98	49.58	1559
130	1.87	36.69	0.96	48.89	1552	192	1.86	37.11	0.97	49.17	1563
132	1.85	38.01	0.99	49.78	1551	194	1.83	40.10	1.05	51.11	
134	1.85	37.86	0.99	49.68	1551	196	1.84	38.93	1.02	50.37	
136	1.89	34.27	0.89	47.19	1551	198	1.91	32.51	0.85	45.88	
138	1.84	38.81	1.01	50.30	1550	200					
140	1.87	36.16	0.94	48.53	1554	202	1.87	35.96	0.94	48.39	
142	1.85	37.90	0.99	49.71	1552	204	1.85	38.42	1.00	50.04	
144	1.86	36.98	0.96	49.09	1552	206	1.84	39.10	1.02	50.48	
146	1.85	38.38	1.00	50.02	1550	208	1.92	31.73	0.83	45.27	1566
148	1.83	40.11	1.05	51.12	1549	210	1.94	30.34	0.79	44.17	1558
150	1.85	38.44	1.00	50.06	1552	212	1.89	34.80	0.91	47.57	1567
152	1.85	38.54	1.00	50.12	1552	214	1.88	35.47	0.92	48.05	1566
154	1.88	35.40	0.92	48.00	1551	216	1.90	33.76	0.88	46.81	1564
156	1.88	35.77	0.93	48.25	1551	218	1.92	31.76	0.83	45.30	1564
158	1.86	37.27	0.97	49.29	1552	220	1.89	34.92	0.91	47.66	1564
160	1.85	37.97	0.99	49.75	1553	222	1.88	35.38	0.92	47.98	1565
162	1.86	36.73	0.96	48.92	1557	224	1.89	34.51	0.90	47.37	1565
164	1.85	38.05	0.99	49.80	1555	226	1.92	32.48	0.85	45.86	1567
166	1.85	38.24	1.00	49.93	1555	228	1.88	35.66	0.93	48.18	1568
168	1.86	37.22	0.97	49.25	1555	230	1.89	34.65	0.90	47.46	1570
170	1.85	37.76	0.98	49.61	1556	232	1.91	33.03	0.86	46.27	1570
172	1.88	35.64	0.93	48.16	1555	234	1.81	41.61	1.08	52.04	
174	1.86	37.22	0.97	49.25	1556	236	1.82	40.64	1.06	51.45	
176	1.87	36.63	0.96	48.85	1555						
178	1.86	36.93	0.96	49.06	1561						
180	1.88	35.05	0.91	47.75	1554						
182	1.87	36.46	0.95	48.74	1557						

## HM 40

## HM 40

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						62	1.82	40.91	1.07	51.61	1548
2						64	1.83	40.33	1.05	51.26	1550
4						66	1.82	40.89	1.07	51.60	1546
6						68	1.82	40.99	1.07	51.66	1545
8						70	1.82	41.17	1.07	51.77	1542
10	1.55	82.55	2.15	68.28	1457	72	1.83	40.16	1.05	51.15	1541
12	1.56	78.41	2.04	67.15	1506	74	1.82	41.08	1.07	51.72	1543
14	1.60	71.64	1.87	65.13	1501	76	1.82	40.88	1.07	51.59	1542
16	1.71	53.41	1.39	58.20	1507	78	1.80	42.54	1.11	52.59	1543
18	1.72	51.85	1.35	57.48	1517	80	1.83	39.56	1.03	50.77	1543
20	1.74	50.10	1.31	56.64	1518	82	1.84	38.67	1.01	50.21	1543
22	1.76	46.89	1.22	55.01	1520	84	1.84	38.74	1.01	50.25	1539
24	1.72	52.26	1.36	57.68	1512	86	1.84	39.39	1.03	50.67	1541
26	1.72	52.52	1.37	57.79	1511	88	1.83	39.86	1.04	50.96	1544
28	1.72	52.10	1.36	57.60	1515	90	1.83	40.18	1.05	51.17	1544
30	1.74	49.38	1.29	56.28	1521	92	1.82	40.82	1.06	51.56	1543
32	1.76	47.16	1.23	55.15	1523	94	1.84	39.09	1.02	50.48	1538
34	1.69	56.92	1.48	59.74	1502	96	1.83	40.43	1.05	51.32	1538
36	1.70	55.04	1.44	58.94	1499	98	1.81	41.79	1.09	52.15	1541
38	1.66	60.35	1.57	61.14	1499	100	1.82	40.92	1.07	51.62	1540
40	1.71	53.24	1.39	58.13	1500	102	1.82	41.27	1.08	51.83	1542
42	1.70	54.78	1.43	58.82	1514	104	1.84	38.64	1.01	50.19	1542
44	1.69	56.80	1.48	59.70		106	1.83	39.55	1.03	50.77	1543
46	1.74	49.86	1.30	56.52	1501	108	1.81	41.53	1.08	51.99	1544
48	1.76	47.50	1.24	55.33	1555	110	1.82	40.60	1.06	51.43	1543
50						112	1.85	38.51	1.00	50.10	1545
52	1.76	47.55	1.24	55.35		114	1.82	40.88	1.07	51.60	1545
54	1.72	52.30	1.36	57.69		116	1.83	40.31	1.05	51.25	1547
56	1.78	44.75	1.17	53.85	1527	118	1.84	39.18	1.02	50.53	1546
58	1.80	43.00	1.12	52.86		120	1.82	40.54	1.06	51.39	1544
60	1.80	42.82	1.12	52.75	1548	122	1.83	39.73	1.04	50.88	1544

## HM 40

## HM 40

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
124	1.85	37.82	0.99	49.65	1546	186	1.88	35.36	0.92	47.97	1566
126	1.83	40.18	1.05	51.16	1546	188	1.86	36.73	0.96	48.92	1561
128	1.84	39.37	1.03	50.65	1547	190	1.88	35.71	0.93	48.22	1561
130	1.81	41.69	1.09	52.09	1536	192	1.85	38.43	1.00	50.05	1560
132	1.84	39.18	1.02	50.54	1546	194	1.88	35.25	0.92	47.89	1561
134	1.85	37.93	0.99	49.72	1546	196	1.87	36.52	0.95	48.78	1560
136	1.85	38.51	1.00	50.11	1548	198	1.92	32.26	0.84	45.69	1552
138	1.86	36.84	0.96	48.99	1550	200	1.86	37.46	0.98	49.41	1561
140	1.84	38.88	1.01	50.34	1551	202	1.88	35.44	0.92	48.03	1561
142	1.88	35.47	0.92	48.04	1553	204	1.85	38.12	0.99	49.85	1564
144	1.78	45.25	1.18	54.12		206	1.89	34.44	0.90	47.31	1560
146	1.86	36.72	0.96	48.91		208	1.86	36.78	0.96	48.95	1561
148	1.88	35.78	0.93	48.27	1544	210	1.86	36.94	0.96	49.06	1560
150	1.78	45.26	1.18	54.13		212	1.87	35.84	0.93	48.31	1560
152	1.81	41.75	1.09	52.12		214	1.90	34.07	0.89	47.04	1557
154	1.80	43.42	1.13	53.10		216	1.87	36.61	0.95	48.83	1560
156	1.86	37.43	0.98	49.39		218	1.87	36.01	0.94	48.43	1559
158	1.88	34.98	0.91	47.70		220	1.88	35.73	0.93	48.23	1563
160	1.87	36.10	0.94	48.49	1556	222	1.89	34.66	0.90	47.47	1562
162	1.95	29.49	0.77	43.47	1558	224	1.87	35.84	0.93	48.31	1562
164	1.86	37.29	0.97	49.29	1565	226	1.88	35.47	0.92	48.05	1564
166	1.86	37.28	0.97	49.29	1550	228	1.87	35.96	0.94	48.39	1563
168	1.86	36.73	0.96	48.92	1557	230	1.88	35.32	0.92	47.94	1563
170	1.88	35.37	0.92	47.98	1558	232	1.89	34.34	0.90	47.24	1561
172	1.88	35.65	0.93	48.18	1563	234	1.90	33.91	0.88	46.93	1560
174	1.85	37.99	0.99	49.76	1562	236	1.88	35.78	0.93	48.26	1567
176	1.86	36.92	0.96	49.05	1561	238	1.90	33.62	0.88	46.72	1570
178	1.91	32.52	0.85	45.88	1561	240	1.90	34.09	0.89	47.06	1575
180	1.91	33.28	0.87	46.46	1558	242	1.77	46.32	1.21	54.71	
182	1.87	36.26	0.95	48.60	1559	244	1.83	40.05	1.04	51.09	1547
184	1.87	36.32	0.95	48.64	1558	246	1.88	35.82	0.93	48.29	

## HM 41

## HM 41

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.64	64.75	1.69	62.80	1484
2						62	1.76	47.36	1.23	55.25	1490
4						64	1.74	49.43	1.29	56.31	1492
6						66	1.61	68.69	1.79	64.17	1482
8	1.60	70.73	1.84	64.84		68	1.63	66.24	1.73	63.33	1481
10	1.60	72.05	1.88	65.26		70	1.72	52.24	1.36	57.66	
12	1.58	74.85	1.95	66.12		72	1.59	73.10	1.91	65.59	1478
14	1.61	69.25	1.81	64.36		74	1.65	62.91	1.64	62.13	1485
16	1.59	73.10	1.91	65.59		76	1.62	67.60	1.76	63.80	1487
18	1.59	72.99	1.90	65.55		78	1.66	61.47	1.60	61.58	1495
20	1.67	59.15	1.54	60.67		80	1.65	63.07	1.64	62.19	1488
22	1.61	69.08	1.80	64.30		82	1.65	63.17	1.65	62.22	1485
24	1.60	70.52	1.84	64.77	1455	84	1.64	63.62	1.66	62.39	1489
26	1.53	85.39	2.23	69.01	1480	86	1.62	67.23	1.75	63.67	1486
28	1.92	31.97	0.83	45.46		88	1.65	62.31	1.62	61.90	1490
30	1.68	58.22	1.52	60.29	1497	90	1.63	66.63	1.74	63.47	1486
32	1.61	69.57	1.81	64.46	1480	92	1.64	63.97	1.67	62.52	1489
34	1.61	69.47	1.81	64.43	1482	94	1.58	75.33	1.96	66.26	
36	1.76	47.54	1.24	55.35	1503	96	1.67	58.70	1.53	60.48	1485
38	1.71	53.86	1.40	58.41	1504	98	1.71	53.08	1.38	58.05	1531
40	1.68	57.99	1.51	60.19	1497	100					
42	1.64	63.79	1.66	62.45	1489	102	1.61	69.40	1.81	64.41	1512
44	1.65	62.18	1.62	61.85	1486	104	1.66	60.78	1.58	61.31	
46	1.62	68.30	1.78	64.04	1483	106	1.59	72.28	1.88	65.33	
48	1.62	67.75	1.77	63.85	1478	108	1.68	58.50	1.53	60.40	1504
50	1.59	73.21	1.91	65.62	1478	110	1.68	57.85	1.51	60.13	1506
52	1.60	71.55	1.87	65.10	1479	112	1.68	57.30	1.49	59.91	1508
54	1.64	64.68	1.69	62.78	1483	114	1.65	61.95	1.62	61.76	1501
56	1.65	62.26	1.62	61.88	1491	116	1.64	63.90	1.67	62.49	1497
58	1.67	59.09	1.54	60.64	1500	118	1.71	54.05	1.41	58.50	1509
						120	1.68	58.15	1.52	60.26	1506

## HM 41

## HM 41

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.67	58.98	1.54	60.60	1501	184	1.67	59.45	1.55	60.79	1519
124	1.67	58.77	1.53	60.51	1500	186	1.71	53.54	1.40	58.26	1521
126	1.65	61.75	1.61	61.69	1499	188	1.71	53.92	1.41	58.43	1522
128	1.65	61.72	1.61	61.68	1502	190	1.70	54.83	1.43	58.84	1517
130	1.70	54.49	1.42	58.69	1505	192	1.69	56.01	1.46	59.36	1525
132	1.71	53.40	1.39	58.20	1512	194	1.70	54.47	1.42	58.68	1536
134	1.70	55.59	1.45	59.18	1510	196	1.64	64.82	1.69	62.83	
136	1.70	54.96	1.43	58.90	1514	198	1.68	58.55	1.53	60.42	
138	1.69	56.11	1.46	59.40	1510	200	1.77	46.61	1.22	54.86	
140	1.65	61.94	1.61	61.76	1507	202					
142	1.69	56.14	1.46	59.41	1504	204	1.63	65.94	1.72	63.23	
144	1.64	63.98	1.67	62.52	1499	206	1.61	69.07	1.80	64.30	
146	1.62	67.33	1.76	63.71	1493	208	1.68	58.54	1.53	60.42	
148	1.65	62.84	1.64	62.10	1493	210	1.67	59.16	1.54	60.67	
150	1.68	57.60	1.50	60.03	1498	212	1.69	56.91	1.48	59.74	
152	1.64	64.79	1.69	62.81	1497	214	1.66	60.90	1.59	61.36	1537
154	1.64	64.89	1.69	62.85	1504	216	1.75	48.04	1.25	55.61	1531
156	1.67	59.47	1.55	60.79	1507	218	1.77	46.27	1.21	54.68	1533
158	1.71	53.50	1.40	58.25	1509	220	1.77	46.42	1.21	54.76	1530
160	1.71	53.08	1.38	58.05	1513	222	1.75	48.35	1.26	55.77	1542
162	1.69	56.59	1.48	59.60	1509	224	1.79	43.82	1.14	53.33	1537
164	1.65	62.92	1.64	62.13	1503	226	1.78	45.65	1.19	54.35	1535
166	1.65	61.94	1.62	61.76	1500	228	1.79	43.70	1.14	53.26	1539
168	1.67	59.19	1.54	60.68	1514	230	1.79	43.75	1.14	53.28	1528
170	1.69	55.86	1.46	59.29	1518	232	1.76	47.30	1.23	55.22	1508
172	1.65	62.14	1.62	61.84	1516	234	1.70	55.70	1.45	59.22	1577
174	1.63	65.90	1.72	63.21	1514	236	1.78	44.71	1.17	53.83	1514
176	1.59	72.32	1.89	65.35	1502	238	1.70	54.55	1.42	58.72	1517
178	1.59	74.14	1.93	65.91	1499	240	1.71	53.60	1.40	58.29	1518
180	1.60	71.86	1.87	65.20	1501	242	1.72	52.13	1.36	57.61	1515
182	1.64	64.77	1.69	62.81	1504	244	1.71	53.31	1.39	58.16	



## HM 41

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.56	78.59	2.05	67.20	1512
248	1.76	46.98	1.23	55.06	1530
250	1.84	38.62	1.01	50.18	1551
252	1.96	28.88	0.75	42.96	1559
254	1.72	51.79	1.35	57.45	1506
256	1.72	52.29	1.36	57.69	1510
258	1.66	60.13	1.57	61.06	1500
260	1.78	45.46	1.19	54.24	1518
262	1.85	37.94	0.99	49.73	1542
264	1.76	47.21	1.23	55.18	1541
266	1.81	41.82	1.09	52.17	1545
268	1.79	43.97	1.15	53.41	1541
270	1.88	35.80	0.93	48.28	1570
272	1.78	44.98	1.17	53.97	1537
274	1.73	50.63	1.32	56.90	1522
276	1.73	51.43	1.34	57.28	1521
278	1.69	55.95	1.46	59.33	1517
280	1.57	78.08	2.04	67.06	1484
282	1.57	77.93	2.03	67.02	
284	1.69	56.55	1.47	59.59	
286	1.72	52.32	1.36	57.70	1520
288	1.77	45.80	1.19	54.42	1535
290	1.74	49.63	1.29	56.41	1532
292	1.78	45.65	1.19	54.35	1535
294	1.76	47.99	1.25	55.58	1543
296	1.71	54.11	1.41	58.52	
298	1.72	52.00	1.36	57.55	
300	1.74	49.42	1.29	56.31	

## HM 43

## HM 43

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.78	45.04	1.17	54.01	1532
2						62	1.78	44.97	1.17	53.97	1530
4						64	1.78	45.28	1.18	54.14	1533
6	1.43	115.35	3.01	75.05		66	1.79	43.69	1.14	53.25	1533
8	1.50	94.64	2.47	71.16		68	1.79	43.97	1.15	53.41	1533
10	1.51	92.15	2.40	70.61	1500	70	1.81	42.36	1.10	52.48	1536
12	1.62	68.35	1.78	64.06	1502	72	1.79	44.53	1.16	53.73	1535
14	1.63	66.39	1.73	63.38	1509	74	1.78	45.50	1.19	54.26	1533
16	1.62	67.59	1.76	63.80	1508	76	1.79	44.17	1.15	53.52	1533
18	1.71	54.01	1.41	58.48	1516	78	1.78	45.43	1.18	54.23	1535
20	1.70	54.94	1.43	58.89	1516	80	1.79	44.20	1.15	53.54	1534
22	1.69	56.06	1.46	59.38	1516	82	1.78	45.19	1.18	54.09	1537
24	1.73	50.58	1.32	56.87	1524	84	1.79	44.16	1.15	53.52	1538
26	1.73	51.16	1.33	57.15	1522	86	1.79	44.52	1.16	53.72	1536
28	1.70	54.66	1.43	58.76	1518	88	1.79	44.51	1.16	53.72	1536
30	1.73	51.28	1.34	57.21	1521	90	1.78	45.51	1.19	54.27	1538
32	1.72	52.92	1.38	57.98	1513	92	1.80	42.53	1.11	52.58	1537
34	1.73	50.94	1.33	57.05	1516	94	1.78	45.69	1.19	54.37	1539
36	1.72	52.26	1.36	57.67	1519	96	1.73	51.62	1.35	57.38	
38	1.75	48.98	1.28	56.09	1523	98	1.77	45.88	1.20	54.47	
40	1.73	50.97	1.33	57.06	1523	100	1.82	40.64	1.06	51.45	
42	1.75	48.52	1.27	55.85	1532	102					
44	1.73	51.59	1.35	57.36	1526	104	1.74	50.06	1.31	56.62	
46	1.77	46.31	1.21	54.70	1528	106	1.75	48.08	1.25	55.63	
48	1.75	48.74	1.27	55.96	1528	108	1.80	43.12	1.12	52.93	
50	1.77	46.45	1.21	54.77	1531	110	1.82	41.39	1.08	51.90	
52	1.78	44.72	1.17	53.83	1529	112	1.80	43.01	1.12	52.86	
54	1.78	45.10	1.18	54.04	1528	114	1.79	44.42	1.16	53.66	1526
56	1.78	45.55	1.19	54.29	1531	116	1.81	41.69	1.09	52.09	1549
58	1.77	46.68	1.22	54.90	1531	118	1.79	43.96	1.15	53.40	1533
						120	1.80	42.68	1.11	52.67	1544

## HM 43

## HM 43

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.81	41.91	1.09	52.22	1544	184	1.80	42.83	1.12	52.76	1543
124	1.80	42.63	1.11	52.64	1510	186	1.85	38.07	0.99	49.82	1545
126	1.84	39.06	1.02	50.46	1545	188	1.82	41.34	1.08	51.88	1536
128	1.82	41.44	1.08	51.93	1541	190	1.82	40.61	1.06	51.43	1543
130	1.84	39.03	1.02	50.44	1541	192	1.83	40.41	1.05	51.31	1542
132	1.84	39.23	1.02	50.56	1542	194	1.80	43.21	1.13	52.98	1544
134	1.82	41.24	1.08	51.81	1543	196	1.73	50.56	1.32	56.87	1539
136	1.83	39.75	1.04	50.89	1542	198					
138	1.82	40.78	1.06	51.54	1543	200					
140	1.80	43.35	1.13	53.06	1539	202	1.79	44.44	1.16	53.68	
142	1.74	49.54	1.29	56.36	1543	204					
144	1.74	50.26	1.31	56.72	1543	206	1.87	35.89	0.94	48.34	
146	1.78	45.28	1.18	54.14	1544	208	1.84	39.43	1.03	50.70	
148	1.80	42.57	1.11	52.61	1542	210	1.91	32.63	0.85	45.97	1569
150	1.81	42.17	1.10	52.37	1540	212	1.90	33.85	0.88	46.88	1567
152	1.82	40.56	1.06	51.40	1540	214	1.92	31.95	0.83	45.45	1566
154	1.82	40.77	1.06	51.53	1539	216	1.92	32.48	0.85	45.85	1567
156	1.83	39.76	1.04	50.90	1538	218	1.90	33.97	0.89	46.97	1565
158	1.82	40.53	1.06	51.38	1539	220	1.89	34.45	0.90	47.32	1566
160	1.81	41.89	1.09	52.21	1540	222	1.90	34.10	0.89	47.07	1566
162	1.81	41.80	1.09	52.15	1541	224	1.91	33.12	0.86	46.34	1562
164	1.84	39.33	1.03	50.63	1541	226	1.90	34.02	0.89	47.01	1564
166	1.83	40.18	1.05	51.16	1541	228	1.91	32.94	0.86	46.21	1565
168	1.82	40.99	1.07	51.66	1541	230	1.90	33.51	0.87	46.63	1567
170	1.80	43.37	1.13	53.07	1541	232	1.91	33.22	0.87	46.41	1565
172	1.81	42.22	1.10	52.40	1543	234	1.90	33.62	0.88	46.71	1567
174	1.82	40.61	1.06	51.43	1542	236	1.90	33.83	0.88	46.87	1569
176	1.81	42.02	1.10	52.28	1542	238	1.89	34.41	0.90	47.29	1568
178	1.83	39.49	1.03	50.73	1542	240	1.91	33.06	0.86	46.30	1566
180	1.85	38.24	1.00	49.93	1542	242	1.88	35.23	0.92	47.88	1567
182	1.83	39.72	1.04	50.88	1542	244	1.89	34.26	0.89	47.18	1567

# HM 43

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.90	33.43	0.87	46.57	1565
248	1.92	31.76	0.83	45.30	1566
250	1.93	31.38	0.82	45.00	1569
252	1.89	34.32	0.89	47.23	1569
254	1.90	33.36	0.87	46.52	1570
256	1.93	31.70	0.83	45.25	1572
258	1.86	37.14	0.97	49.20	
260	1.89	34.79	0.91	47.56	
262	1.93	31.21	0.81	44.87	

## HM 44

## HM 44

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.56	78.42	2.04	67.16	1483
2						62	1.60	71.61	1.87	65.12	1484
4						64	1.60	70.34	1.83	64.72	1490
6						66	1.62	68.28	1.78	64.03	1487
8	1.54	85.13	2.22	68.94	1505	68	1.65	62.49	1.63	61.97	1495
10	1.56	80.30	2.09	67.68	1503	70	1.74	50.03	1.30	56.61	1507
12	1.57	77.28	2.02	66.83	1503	72	1.60	71.85	1.87	65.20	1490
14	1.55	82.73	2.16	68.32	1499	74	1.62	66.79	1.74	63.52	1495
16	1.63	66.60	1.74	63.46	1503	76	1.74	49.87	1.30	56.53	1528
18	1.61	69.07	1.80	64.30	1503	78	1.80	42.88	1.12	52.79	1538
20	1.65	62.65	1.63	62.03	1503	80	1.78	45.46	1.19	54.24	1537
22	1.67	59.74	1.56	60.90	1507	82	1.77	45.72	1.19	54.38	1538
24	1.64	64.74	1.69	62.80	1503	84	1.81	41.92	1.09	52.22	1545
26	1.67	59.52	1.55	60.81	1506	86	1.85	37.98	0.99	49.76	1586
28	1.67	59.45	1.55	60.79	1508	88	1.90	33.53	0.87	46.64	1579
30	1.70	55.24	1.44	59.02	1509	90	1.90	33.77	0.88	46.82	1573
32	1.62	68.43	1.78	64.08	1496	92	1.92	32.18	0.84	45.62	1576
34	1.64	64.93	1.69	62.87	1502	94	1.85	37.72	0.98	49.58	
36	1.65	62.09	1.62	61.82	1506	96	1.84	38.62	1.01	50.18	
38	1.60	70.34	1.83	64.72	1494	98	1.90	33.93	0.88	46.94	1540
40	1.60	70.86	1.85	64.88	1491	100					
42	1.60	72.13	1.88	65.29	1486	102	1.86	37.56	0.98	49.48	1550
44	1.59	74.01	1.93	65.87	1484	104	1.84	39.33	1.03	50.63	
46	1.58	74.77	1.95	66.10	1488	106	1.90	33.79	0.88	46.84	1571
48	1.68	57.97	1.51	60.18	1505	108	1.89	34.16	0.89	47.11	1568
50	1.69	56.72	1.48	59.66	1507	110	1.89	34.57	0.90	47.41	1565
52	1.64	63.40	1.65	62.31	1497	112	1.89	30.87	0.80	44.60	1559
54	1.65	63.11	1.65	62.20	1498	114	1.94	34.64	0.90	47.46	1565
56	1.59	72.37	1.89	65.36	1489	116	1.89	38.43	1.00	50.05	1552
58	1.61	69.25	1.81	64.36	1491	118	1.85	34.67	0.90	47.48	1564

## HM 44

## HM 44

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.91	32.72	0.85	46.04	1566	184	1.90	33.74	0.88	46.80	1567
124	1.86	36.76	0.96	48.94	1556	186	1.91	32.54	0.85	45.90	1568
126	1.87	36.17	0.94	48.53	1558	188	1.93	31.42	0.82	45.03	1571
128	1.86	36.83	0.96	48.99	1559	190	1.89	34.21	0.89	47.14	1573
130	1.90	33.68	0.88	46.76	1557	192	1.92	32.40	0.84	45.79	1573
132	1.88	35.45	0.92	48.03	1557	194	1.91	32.91	0.86	46.18	1576
134	1.87	35.88	0.94	48.34	1556	196	1.86	37.10	0.97	49.17	
136	1.90	34.00	0.89	46.99	1557	198	1.87	36.40	0.95	48.69	
138	1.88	35.81	0.93	48.29	1559	200	1.93	31.07	0.81	44.76	
140	1.87	36.03	0.94	48.44	1558	202					
142	1.86	36.76	0.96	48.94	1559	204	1.90	33.49	0.87	46.62	
144	1.88	35.12	0.92	47.80	1555	206	1.91	33.28	0.87	46.46	
146	1.88	35.61	0.93	48.15	1557	208	1.94	30.55	0.80	44.34	1579
148	1.88	35.71	0.93	48.22	1558	210	1.95	29.83	0.78	43.75	1577
150	1.87	36.22	0.94	48.57	1557	212	1.96	28.87	0.75	42.95	1574
152	1.89	34.33	0.90	47.23	1558	214	1.96	28.84	0.75	42.92	1576
154	1.88	35.44	0.92	48.03	1558	216	1.96	29.37	0.77	43.37	1579
156	1.88	35.39	0.92	47.99	1558	218	1.98	28.00	0.73	42.20	1573
158	1.92	32.31	0.84	45.72	1552	220	1.95	30.05	0.78	43.94	1576
160	1.90	34.05	0.89	47.03	1555	222	1.95	29.95	0.78	43.85	1576
162	1.89	34.66	0.90	47.47	1559	224	1.97	28.27	0.74	42.43	1578
164	1.87	36.34	0.95	48.65	1559	226	1.98	27.87	0.73	42.09	1574
166	1.87	36.19	0.94	48.55	1561	228	1.97	28.63	0.75	42.74	1574
168	1.91	32.50	0.85	45.87	1558	230	2.01	25.72	0.67	40.14	1572
170	1.89	34.76	0.91	47.54	1562	232	2.03	24.70	0.64	39.17	1570
172	1.88	35.73	0.93	48.23	1562	234	1.74	49.96	1.30	56.57	1573
174	1.95	29.71	0.77	43.65	1557	236	1.70	55.46	1.45	59.12	
176	1.89	34.76	0.91	47.55	1565	238	1.71	54.23	1.41	58.58	
178	1.91	33.18	0.87	46.38	1566	240	1.66	61.60	1.61	61.63	
180	1.92	31.72	0.83	45.27	1566	242					
182	1.92	32.30	0.84	45.72	1568	244	1.72	52.32	1.36	57.70	

## HM 46

## HM 46

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.77	46.81	1.22	54.97	1536
2						62	1.77	46.76	1.22	54.94	1537
4						64	1.77	46.07	1.20	54.57	1536
6						66	1.82	41.33	1.08	51.87	1537
8						68	1.83	40.07	1.04	51.10	1536
10	1.49	97.87	2.55	71.85	1494	70	1.80	42.78	1.12	52.73	1542
12	1.46	105.52	2.75	73.34	1490	72	1.82	41.33	1.08	51.87	1542
14	1.47	103.21	2.69	72.91	1490	74	1.82	40.76	1.06	51.52	1540
16	1.50	93.27	2.43	70.86	1494	76	1.82	40.63	1.06	51.44	1540
18	1.51	91.65	2.39	70.50	1498	78	1.82	40.63	1.06	51.44	1542
20	1.54	83.87	2.19	68.62	1491	80	1.84	38.90	1.01	50.35	1543
22	1.47	104.66	2.73	73.18	1487	82	1.82	41.03	1.07	51.68	1543
24	1.53	85.53	2.23	69.04	1488	84	1.83	40.01	1.04	51.06	1543
26	1.55	80.93	2.11	67.85	1489	86	1.82	40.77	1.06	51.53	1546
28	1.61	70.21	1.83	64.67	1496	88	1.83	40.34	1.05	51.27	1546
30	1.66	60.21	1.57	61.09	1506	90	1.85	38.16	1.00	49.88	1546
32	1.66	61.04	1.59	61.41	1508	92	1.84	39.44	1.03	50.70	1548
34	1.67	59.96	1.56	60.99	1506	94	1.83	39.74	1.04	50.89	1549
36	1.63	65.42	1.71	63.04	1499	96	1.78	44.69	1.17	53.81	1539
38	1.62	67.97	1.77	63.93	1497	98	1.84	39.19	1.02	50.54	1539
40	1.64	64.12	1.67	62.57	1499	100	1.88	35.78	0.93	48.26	
42	1.67	59.57	1.55	60.83	1507	102	1.71	54.27	1.42	58.59	
44	1.70	54.45	1.42	58.68	1512	104	1.59	72.49	1.89	65.40	
46	1.69	56.67	1.48	59.64	1509	106	1.57	76.66	2.00	66.65	
48	1.71	54.05	1.41	58.49	1512	108	1.65	61.88	1.61	61.74	
50	1.71	54.34	1.42	58.63	1517	110	1.64	63.95	1.67	62.51	1538
52	1.71	53.24	1.39	58.13	1517	112	1.55	81.26	2.12	67.94	1559
54	1.76	47.39	1.24	55.27	1532	114	1.45	108.76	2.84	73.93	1557
56	1.77	46.20	1.20	54.64	1534	116	1.54	84.99	2.22	68.91	1554
58	1.79	43.74	1.14	53.28	1543	118	1.49	98.39	2.57	71.95	1556
	1.74	49.46	1.29	56.32	1529	120	1.54	82.94	2.16	68.38	1555

## HM 46

## HM 46

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.62	68.31	1.78	64.04	1560	184	1.86	37.05	0.97	49.14	1555
124	1.75	48.11	1.25	55.64	1555	186	1.86	37.59	0.98	49.50	1556
126	1.81	42.21	1.10	52.40	1556	188	1.86	37.23	0.97	49.26	1556
128	1.85	37.90	0.99	49.70	1553	190	1.84	39.22	1.02	50.56	1558
130	1.84	39.09	1.02	50.47	1552	192	1.86	37.39	0.97	49.36	1559
132	1.88	35.11	0.92	47.80	1554	194	1.78	45.06	1.17	54.02	
134	1.86	37.54	0.98	49.47	1544	196	1.83	39.63	1.03	50.82	
136	1.85	38.43	1.00	50.05	1552	198	1.81	41.60	1.08	52.03	
138	1.83	39.60	1.03	50.80	1551	200					
140	1.85	38.20	1.00	49.90	1553	202	1.84	38.85	1.01	50.32	
142	1.83	39.55	1.03	50.77	1552	204	1.82	40.77	1.06	51.53	
144	1.84	39.16	1.02	50.52	1551	206	1.84	39.02	1.02	50.43	
146	1.84	38.79	1.01	50.28	1551	208	1.89	34.27	0.89	47.19	1561
148	1.86	37.06	0.97	49.14	1548	210	1.88	35.33	0.92	47.95	1563
150	1.83	40.21	1.05	51.18	1545	212	1.89	34.24	0.89	47.17	1562
152	1.84	39.26	1.02	50.59	1546	214	1.88	35.14	0.92	47.81	1560
154	1.85	38.46	1.00	50.07	1546	216	1.91	33.25	0.87	46.44	1561
156	1.84	38.82	1.01	50.31	1544	218	1.88	34.97	0.91	47.69	1561
158	1.84	39.49	1.03	50.73	1543	220	1.88	35.26	0.92	47.90	1556
160	1.85	38.19	1.00	49.89	1546	222	1.89	34.57	0.90	47.41	1558
162	1.83	39.66	1.03	50.84	1552	224	1.88	35.03	0.91	47.73	1562
164	1.86	36.72	0.96	48.91	1545						
166	1.86	37.06	0.97	49.14	1547						
168	1.84	38.92	1.01	50.37	1550						
170	1.83	39.91	1.04	51.00	1551						
172	1.83	40.03	1.04	51.07	1551						
174	1.83	39.81	1.04	50.93	1549						
176	1.88	35.60	0.93	48.14	1547						
178	1.86	37.08	0.97	49.16	1553						
180	1.84	38.95	1.02	50.38	1553						
182	1.87	36.17	0.94	48.54	1556						



## HM 48

## HM 48

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						66	1.66	60.34	1.57	61.14	1488
2						68	1.69	55.83	1.46	59.28	1502
4						70	1.61	69.18	1.80	64.33	1485
6						72	1.69	56.66	1.48	59.63	1494
8						74	1.60	70.72	1.84	64.84	1481
10						76	1.60	70.68	1.84	64.82	1481
12	1.53	86.81	2.26	69.36		78	1.62	68.18	1.78	64.00	1483
14	1.55	80.71	2.10	67.79		80	1.64	64.80	1.69	62.82	1484
16	1.51	90.31	2.35	70.19		82	1.65	62.77	1.64	62.07	1484
18	1.49	96.30	2.51	71.52		84	1.71	53.67	1.40	58.32	1499
20	1.59	72.33	1.89	65.35		86	1.70	54.44	1.42	58.67	1501
22	1.62	66.78	1.74	63.52		88	1.63	66.42	1.73	63.40	1488
24	1.65	62.63	1.63	62.02	1414	90	1.70	54.57	1.42	58.73	1505
26	1.63	64.97	1.69	62.88		92	1.75	48.36	1.26	55.77	1514
28	1.63	66.32	1.73	63.36	1432	94	1.73	50.75	1.32	56.96	1512
30	1.70	55.32	1.44	59.06	1510	96	1.68	58.14	1.52	60.25	
32	1.73	51.38	1.34	57.26	1518	98	1.71	54.01	1.41	58.48	1539
34	1.71	53.07	1.38	58.05	1509	100	1.74	49.61	1.29	56.40	1563
36	1.69	56.55	1.47	59.59	1499	102					
38	1.64	63.67	1.66	62.41	1497	104	1.78	45.00	1.17	53.99	
40	1.77	46.71	1.22	54.91	1520	106	1.72	51.79	1.35	57.46	
42	1.62	67.79	1.77	63.87	1488	108	1.79	44.59	1.16	53.76	1532
44	1.62	67.92	1.77	63.91	1489	110	1.80	42.87	1.12	52.78	1533
46	1.68	57.79	1.51	60.11	1498	112	1.83	40.21	1.05	51.18	1531
48	1.68	57.58	1.50	60.02	1504	114	1.79	44.38	1.16	53.64	1533
50	1.66	60.79	1.59	61.32	1491	116	1.82	40.85	1.07	51.58	1537
52	1.61	69.47	1.81	64.43	1481	118	1.88	35.81	0.93	48.29	1537
54	1.63	66.52	1.73	63.43	1482	120	1.92	32.25	0.84	45.68	1543
56	1.62	68.24	1.78	64.02	1481	122	1.99	27.32	0.71	41.60	
58	1.59	72.40	1.89	65.37	1479	124	1.84	39.30	1.02	50.61	1542
60	1.62	66.73	1.74	63.50	1483	126	1.81	41.46	1.08	51.95	1540
62	1.74	50.14	1.31	56.66	1506	128	1.84	39.24	1.02	50.57	1539
64	1.70	54.46	1.42	58.68	1501	130	1.85	38.47	1.00	50.08	1539

## HM 48

## HM 48

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
132	1.85	37.85	0.99	49.67	1536	194	1.89	34.61	0.90	47.44	1566
134	1.82	40.74	1.06	51.51	1542	196	1.82	41.10	1.07	51.73	
136	1.82	40.75	1.06	51.52	1541	198	1.87	36.02	0.94	48.43	1552
138	1.84	39.15	1.02	50.52	1541	200	1.91	33.10	0.86	46.32	
140	1.83	40.25	1.05	51.21	1542	202					
142	1.88	35.69	0.93	48.20	1538	204	1.85	38.13	0.99	49.85	
144	1.84	38.61	1.01	50.17	1542	206	1.83	39.92	1.04	51.00	
146	1.89	34.52	0.90	47.37	1535	208	1.90	33.79	0.88	46.84	1561
148	1.83	40.21	1.05	51.18	1543	210	1.96	28.79	0.75	42.88	1580
150	1.85	38.44	1.00	50.06	1547	212	1.91	33.08	0.86	46.31	1561
152	1.84	38.55	1.01	50.13	1543	214	1.94	30.57	0.80	44.35	1565
154	1.86	37.10	0.97	49.17	1548	216	1.91	32.77	0.85	46.07	1568
156	1.87	35.87	0.94	48.33	1549	218	1.93	31.50	0.82	45.10	1566
158	1.84	38.69	1.01	50.22	1548	220	1.93	31.59	0.82	45.17	1567
160	1.86	37.18	0.97	49.22	1545	222	1.93	31.69	0.83	45.24	1569
162	1.87	36.46	0.95	48.74	1549	224	1.92	31.93	0.83	45.43	1568
164	1.88	34.99	0.91	47.71	1553	226	1.95	29.69	0.77	43.64	1568
166	1.89	34.91	0.91	47.65	1553	228	1.93	31.15	0.81	44.82	1566
168	1.87	36.41	0.95	48.70	1555	230	1.94	30.57	0.80	44.35	1567
170	1.88	35.32	0.92	47.94	1557	232	1.93	31.59	0.82	45.17	1568
172	1.88	35.48	0.93	48.05	1556	234	1.93	30.95	0.81	44.66	1568
174	1.88	35.44	0.92	48.03	1555	236	1.89	34.43	0.90	47.31	1563
176	1.90	34.07	0.89	47.04	1552	238	1.92	32.17	0.84	45.62	1566
178	1.87	36.26	0.95	48.60	1556	240	1.91	32.69	0.85	46.01	1569
180	1.90	34.09	0.89	47.06	1559	242	1.93	31.14	0.81	44.81	1569
182	1.87	36.55	0.95	48.80	1557	244	1.93	31.69	0.83	45.24	1578
184	1.89	34.59	0.90	47.42	1558	246	1.95	29.71	0.77	43.65	1576
186	1.86	37.59	0.98	49.50	1559	248	1.78	45.53	1.19	54.28	
188	1.87	36.15	0.94	48.52	1559	250	1.83	39.97	1.04	51.03	
190	1.91	32.60	0.85	45.94	1560	252	1.85	37.84	0.99	49.66	
192	1.86	36.79	0.96	48.96	1562						

## HM 49

## HM 49

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.63	65.02	1.70	62.90	1493
2						62	1.62	67.15	1.75	63.65	1489
4						64	1.72	52.98	1.38	58.01	1509
6						66	1.69	56.32	1.47	59.49	1500
8						68	1.65	61.88	1.61	61.74	1495
10	1.51	91.33	2.38	70.43	1500	70	1.62	67.82	1.77	63.88	1488
12	1.51	91.04	2.37	70.36	1492	72	1.60	71.01	1.85	64.93	1483
14	1.47	103.10	2.69	72.89	1483	74	1.63	65.07	1.70	62.92	1491
16	1.45	108.97	2.84	73.97	1478	76	1.62	67.91	1.77	63.91	1483
18	1.46	106.39	2.77	73.50	1478	78	1.59	73.98	1.93	65.86	1481
20	1.47	103.85	2.71	73.03	1478	80	1.59	72.65	1.89	65.45	1482
22	1.53	86.21	2.25	69.21	1482	82	1.62	67.83	1.77	63.88	1484
24	1.56	79.91	2.08	67.57	1486	84	1.68	58.00	1.51	60.20	1492
26	1.59	74.01	1.93	65.87	1490	86	1.72	52.58	1.37	57.82	1509
28	1.65	63.27	1.65	62.26	1497	88	1.68	57.25	1.49	59.88	1501
30	1.65	62.96	1.64	62.15	1494	90	1.64	64.36	1.68	62.66	1487
32	1.67	59.59	1.55	60.84	1496	92	1.70	55.30	1.44	59.05	1497
34	1.64	64.41	1.68	62.68	1492	94	1.71	53.09	1.38	58.06	1503
36	1.60	71.05	1.85	64.94	1486	96	1.55	80.91	2.11	67.84	
38	1.60	71.07	1.85	64.95	1485	98	1.65	62.61	1.63	62.01	1525
40	1.66	61.03	1.59	61.41	1492	100	1.70	54.93	1.43	58.88	1525
42	1.66	61.01	1.59	61.40	1498	102					
44	1.63	65.38	1.70	63.03	1491	104					
46	1.59	73.17	1.91	65.61	1488	106	1.51	91.40	2.38	70.44	
48	1.65	62.62	1.63	62.02	1490	108	1.59	72.70	1.90	65.47	
50	1.77	46.73	1.22	54.92	1528	110	1.62	67.48	1.76	63.76	
52	1.60	71.87	1.87	65.21	1494	112	1.60	72.19	1.88	65.31	
54	1.80	42.57	1.11	52.61	1535	114	1.62	68.11	1.78	63.98	
56	1.77	46.53	1.21	54.82	1535	116	1.64	64.53	1.68	62.72	1493
58	1.58	75.44	1.97	66.30	1481	118	1.67	59.10	1.54	60.64	
						120	1.66	60.68	1.58	61.27	1500

## HM 49

## HM 49

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.74	50.13	1.31	56.66	1510	184	1.71	54.02	1.41	58.48	1499
124	1.68	57.28	1.49	59.89	1495	186	1.70	55.04	1.44	58.93	1496
126	1.62	67.95	1.77	63.92	1482	188	1.72	52.55	1.37	57.81	1500
128	1.65	62.45	1.63	61.95	1486	190	1.69	56.64	1.48	59.63	1497
130	1.68	58.04	1.51	60.21	1495	192	1.68	57.29	1.49	59.90	1494
132	1.78	45.65	1.19	54.35	1523	194	1.69	56.98	1.49	59.77	1498
134	1.61	69.00	1.80	64.27	1482	196	1.73	51.57	1.34	57.35	1506
136	1.67	58.65	1.53	60.46	1491	198	1.68	58.55	1.53	60.42	1520
138	1.63	65.94	1.72	63.22	1482	200	1.72	52.21	1.36	57.65	1529
140	1.67	59.64	1.55	60.86	1484	202	1.60	72.05	1.88	65.26	
142	1.63	64.99	1.69	62.89	1484	204	1.67	58.86	1.53	60.55	
144	1.69	56.66	1.48	59.63	1485	206	1.70	55.08	1.44	58.95	
146	1.62	66.97	1.75	63.59	1485	208	1.68	58.42	1.52	60.37	
148	1.59	73.06	1.91	65.58	1475	210	1.67	58.93	1.54	60.58	
150	1.62	67.09	1.75	63.63	1481	212	1.66	61.65	1.61	61.65	
152	1.68	57.66	1.50	60.06	1491	214	1.68	57.38	1.50	59.94	
154	1.65	62.93	1.64	62.13	1486	216	1.68	57.50	1.50	59.99	
156	1.63	65.06	1.70	62.91	1484	218	1.69	55.86	1.46	59.29	
158	1.67	58.82	1.53	60.53	1488	220	1.71	53.17	1.39	58.09	1514
160	1.63	66.32	1.73	63.36	1484	222	1.73	50.47	1.32	56.82	1521
162	1.63	65.08	1.70	62.92	1481	224	1.73	51.67	1.35	57.40	1516
164	1.67	59.66	1.56	60.87	1486	226	1.73	51.57	1.34	57.35	1513
166	1.67	59.17	1.54	60.67	1489	228	1.70	54.95	1.43	58.90	1503
168	1.71	53.89	1.41	58.42	1498	230	1.66	61.18	1.60	61.47	1497
170	1.67	59.01	1.54	60.61	1494	232	1.67	60.00	1.56	61.01	1497
172	1.69	56.96	1.49	59.76	1495	234	1.64	64.58	1.68	62.74	1492
174	1.70	54.76	1.43	58.81	1491	236	1.62	67.12	1.75	63.64	1487
176	1.67	59.81	1.56	60.93	1488	238	1.62	68.02	1.77	63.94	1485
178	1.66	60.61	1.58	61.24	1491	240	1.67	59.94	1.56	60.98	1491
180	1.72	52.45	1.37	57.76	1499	242	1.66	60.48	1.58	61.20	1493
182	1.69	56.07	1.46	59.38	1495	244	1.66	61.68	1.61	61.66	1494

## HM 49

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.70	55.68	1.45	59.21	1497
248	1.72	52.79	1.38	57.92	1505
250	1.73	51.68	1.35	57.40	1508
252	1.71	54.32	1.42	58.61	1511
254	1.70	55.29	1.44	59.04	1504
256	1.68	57.16	1.49	59.85	1498
258	1.65	62.52	1.63	61.98	1491
260	1.72	52.05	1.36	57.57	1505
262	1.72	51.76	1.35	57.44	1510
264	1.71	53.92	1.41	58.44	1508
266	1.63	65.11	1.70	62.93	1499
268	1.65	61.96	1.62	61.77	1494
270	1.63	65.30	1.70	63.00	1484
272	1.62	67.42	1.76	63.74	1486
274	1.72	52.66	1.37	57.86	1502
276	1.70	55.63	1.45	59.19	1511
278	1.72	52.15	1.36	57.62	1510
280	1.74	50.35	1.31	56.76	1517
282	1.74	49.83	1.30	56.51	1517
284	1.75	49.12	1.28	56.15	1523
286	1.78	45.26	1.18	54.13	1524
288	1.73	50.80	1.32	56.98	1520
290	1.65	62.42	1.63	61.94	
292	1.64	64.85	1.69	62.84	

## HM 50

## HM 50

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.73	50.63	1.32	56.90	1524
2						62	1.80	42.81	1.12	52.75	1541
4						64	1.60	70.68	1.84	64.83	1489
6						66	1.63	65.82	1.72	63.18	1490
8						68	1.61	68.71	1.79	64.18	1489
10						70	1.62	67.33	1.76	63.71	1494
12						72	1.69	55.91	1.46	59.32	1504
14	1.48	98.77			1498	74	1.66	61.33	1.60	61.53	1498
16	1.50	94.86	2.58	72.03	1488	76	1.66	61.45	1.60	61.57	1493
18	1.48	99.27	2.47	71.21	1484	78	1.67	59.29	1.55	60.72	1496
20	1.49	96.12	2.59	72.13	1483	80	1.74	50.39	1.31	56.78	
22	1.50	95.18	2.51	71.48	1486	82	1.60	70.32	1.83	64.71	1484
24	1.53	87.10	2.48	71.28	1489	84	1.58	74.88	1.95	66.13	1479
26	1.50	94.73	2.27	69.43	1489	86	1.59	73.48	1.92	65.70	1482
28	1.53	86.38	2.47	71.18	1479	88	1.58	74.21	1.94	65.93	1484
30	1.57	76.43	2.25	69.25	1481	90	1.60	70.65	1.84	64.81	1489
32	1.59	73.22	1.99	66.59	1484	92	1.67	59.69	1.56	60.88	1499
34	1.67	59.91	1.91	65.63	1489	94	1.68	57.17	1.49	59.85	1504
36	1.65	62.08	1.56	60.97	1495	96	1.63	66.39	1.73	63.38	
38	1.66	60.67	1.62	61.81	1496	98	1.62	67.14	1.75	63.64	1517
40	1.60	70.75	1.58	61.27	1498	100	1.75	48.77	1.27	55.98	
42	1.60	71.20	1.84	64.85	1490	102					
44	1.60	71.13	1.86	64.99	1484	104	1.52	88.36	2.30	69.73	
46	1.63	65.25	1.85	64.97	1487	106	1.56	79.04	2.06	67.33	
48	1.65	63.08	1.70	62.98	1494	108	1.67	58.73	1.53	60.49	
50	1.59	73.74	1.64	62.19	1495	110	1.65	62.22	1.62	61.87	
52	1.64	64.31	1.92	65.78	1486	112	1.62	66.86	1.74	63.55	
54	1.62	68.19	1.68	62.64	1490	114	1.59	73.12	1.91	65.60	
56	1.82	41.10	1.78	64.00	1493	116	1.61	69.02	1.80	64.28	
58	1.74	49.60	1.07	51.73	1542	118	1.61	69.96	1.82	64.59	
			1.29	56.39	1491	120	1.61	70.25	1.83	64.68	

## HM 50

## HM 50

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.64	64.82	1.69	62.83	1476	184	1.67	58.72	1.53	60.49	1489
124	1.67	59.20	1.54	60.68	1490	186	1.70	54.68	1.43	58.77	1497
126	1.67	59.14	1.54	60.66	1509	188	1.69	56.08	1.46	59.39	1493
128	1.73	50.83	1.33	56.99	1505	190	1.67	59.81	1.56	60.93	1489
130	1.72	51.85	1.35	57.48	1486	192	1.67	59.75	1.56	60.91	1492
132	1.62	67.43	1.76	63.74	1489	194	1.69	56.26	1.47	59.46	1497
134	1.65	62.50	1.63	61.97	1488	196	1.64	64.69	1.69	62.78	
136	1.65	62.37	1.63	61.92	1486	198	1.70	54.85	1.43	58.85	
138	1.66	60.20	1.57	61.08	1486	200	1.73	50.73	1.32	56.95	1485
140	1.65	61.94	1.61	61.76	1487	202					
142	1.66	60.80	1.59	61.32	1487	204					
144	1.67	59.85	1.56	60.95	1484	206	1.56	78.70	2.05	67.23	
146	1.65	62.81	1.64	62.09	1487	208	1.65	62.72	1.64	62.06	
148	1.65	62.49	1.63	61.97	1485	210	1.66	60.30	1.57	61.12	
150	1.65	62.84	1.64	62.10	1492	212	1.74	50.37	1.31	56.77	
152	1.64	63.69	1.66	62.42	1489	214	1.72	52.94	1.38	57.99	
154	1.70	54.91	1.43	58.88	1490	216	1.70	54.92	1.43	58.88	
156	1.66	60.45	1.58	61.18	1489	218	1.69	56.68	1.48	59.64	
158	1.69	56.60	1.48	59.61	1490	220	1.69	56.08	1.46	59.38	
160	1.69	56.98	1.49	59.77	1490	222	1.69	56.80	1.48	59.69	1480
162	1.69	56.80	1.48	59.69	1486	224	1.72	52.89	1.38	57.97	1497
164	1.68	58.55	1.53	60.42	1488	226	1.70	54.45	1.42	58.67	1496
166	1.67	59.86	1.56	60.95	1487	228	1.69	56.68	1.48	59.64	1495
168	1.67	59.34	1.55	60.74	1492	230	1.71	53.01	1.38	58.02	1495
170	1.68	57.96	1.51	60.18	1492	232	1.72	52.65	1.37	57.86	1490
172	1.67	59.36	1.55	60.75	1489	234	1.69	56.70	1.48	59.65	1489
174	1.70	55.52	1.45	59.15	1490	236	1.71	53.70	1.40	58.34	1494
176	1.67	59.77	1.56	60.91	1487	238	1.68	57.45	1.50	59.97	1488
178	1.67	59.19	1.54	60.68	1490	240	1.65	62.48	1.63	61.96	1488
180	1.67	59.49	1.55	60.80	1487	242	1.71	54.26	1.41	58.59	1493
182	1.66	61.05	1.59	61.42	1487	244	1.69	56.85	1.48	59.72	1491

# HM 50

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.70	55.14	1.44	58.98	1491
248	1.71	53.82	1.40	58.39	1491
250	1.69	55.86	1.46	59.29	1491
252	1.71	53.38	1.39	58.19	1492
254	1.71	54.27	1.41	58.59	1493
256	1.72	52.81	1.38	57.93	1495
258	1.71	53.09	1.38	58.06	1494
260	1.71	53.27	1.39	58.14	1493
262	1.70	55.53	1.45	59.15	1494
264	1.69	56.88	1.48	59.73	1494
266	1.70	55.22	1.44	59.01	1493
268	1.68	57.41	1.50	59.95	1492
270	1.70	55.63	1.45	59.19	1473
272	1.74	49.80	1.30	56.49	1502
274	1.73	50.64	1.32	56.90	1506
276	1.74	49.91	1.30	56.55	1507
278	1.71	53.05	1.38	58.04	1508
280	1.64	64.21	1.67	62.61	
282	1.71	53.67	1.40	58.32	1530
284	1.75	48.59	1.27	55.89	1529



## HM 51

## HM 51

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.92	32.49	0.85	45.86	1541
2						62	1.89	34.56	0.90	47.40	1539
4						64	1.89	34.74	0.91	47.53	1539
6						66	1.89	34.36	0.90	47.25	1542
8					1495	68	1.89	34.45	0.90	47.32	1542
10	1.68	57.43	1.50	59.96	1497	70	1.88	35.45	0.92	48.03	1543
12	1.72	52.10	1.36	57.60	1497	72	1.89	34.45	0.90	47.32	1544
14	1.75	49.05	1.28	56.12	1498	74	1.89	34.86	0.91	47.62	1543
16	1.71	53.35	1.39	58.18	1495	76	1.89	34.35	0.90	47.25	1544
18	1.67	59.72	1.56	60.89	1490	78	1.90	33.39	0.87	46.54	1544
20	1.74	49.98	1.30	56.58	1499	80	1.91	32.85	0.86	46.14	1545
22	1.74	50.06	1.31	56.62	1498	82	1.89	34.80	0.91	47.57	1544
24	1.70	55.17	1.44	58.99	1492	84	1.90	33.66	0.88	46.74	1544
26	1.72	52.35	1.37	57.72	1499	86	1.91	32.91	0.86	46.18	1545
28	1.74	49.63	1.29	56.41	1502	88	1.90	33.86	0.88	46.89	1549
30	1.75	49.08	1.28	56.13	1504	90	1.90	33.70	0.88	46.78	1549
32	1.78	45.55	1.19	54.29	1512	92	1.91	32.98	0.86	46.23	1549
34	1.76	47.36	1.23	55.25	1508						
36	1.78	45.28	1.18	54.14	1511						
38	1.81	41.60	1.08	52.03	1520	100	1.77	46.52	1.21	54.81	
40	1.82	41.44	1.08	51.93	1523	102	1.74	49.31	1.29	56.25	
42	1.87	36.11	0.94	48.50	1544	104	1.75	48.02	1.25	55.59	
44	1.88	35.42	0.92	48.02	1538	106	1.83	40.44	1.05	51.32	1544
46	1.89	34.66	0.90	47.47	1540	108	1.85	38.47	1.00	50.08	1540
48	1.91	32.71	0.85	46.03	1538	110	1.84	38.80	1.01	50.29	1544
50	1.89	34.29	0.89	47.21	1540	112	1.84	39.02	1.02	50.43	1542
52	1.89	34.24	0.89	47.17	1541	114	1.85	38.50	1.00	50.10	1542
54	1.89	34.51	0.90	47.36	1541	116	1.83	39.66	1.03	50.84	1543
56	1.89	34.48	0.90	47.34	1539	118	1.83	39.97	1.04	51.03	1543
58	1.89	34.35	0.90	47.25	1540	120	1.83	40.16	1.05	51.15	1543

# HM 51

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.83	40.04	1.04	51.07	1544
124	1.83	40.11	1.05	51.12	1545
126	1.87	36.44	0.95	48.72	1546
128	1.84	38.97	1.02	50.40	1547
130	1.81	41.51	1.08	51.98	1550
132	1.73	50.90	1.33	57.03	
134	1.83	40.22	1.05	51.19	1529
136	1.87	36.12	0.94	48.50	

## HM 52

## HM 52

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						62					1495
2						64					1494
4						66					1496
6					1513	68					1501
8	1.68	58.57	1.53	60.43		70					1508
10	1.66	60.99	1.59	61.39	1587	72					1507
12	1.67	59.71	1.56	60.89		74					1504
14						76					1498
16						78					1488
18					1428	80					1491
20					1479	82					1495
22					1496	84					1498
24					1486	86					1492
26					1492	88					1492
28					1494	90					1496
30					1501	92					1516
32					1510	94					1522
34					1500	96					
36					1492	98					
38					1494	100					1400
40					1502	102					1499
42					1495	104					
44					1489	106	1.86	37.21	0.97	49.24	
46					1494	108	1.74	49.38	1.29	56.29	1414
48					1500	110	1.77	46.71	1.22	54.91	
50					1499	112	1.84	38.58	1.01	50.15	
52					1552	114	1.70	54.55	1.42	58.72	
54					1556	116	1.69	55.81	1.46	59.27	
56					1550	118	1.69	56.73	1.48	59.67	1486
58					1502	120	1.70	54.42	1.42	58.66	1487
60					1534	122	1.69	55.81	1.46	59.27	1487
					1556	124	1.72	52.94	1.38	57.99	1489

## HM 52

## HM 52

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
126	1.72	51.84	1.35	57.48	1492	192	1.75	48.73	1.27	55.96	1497
128	1.72	52.88	1.38	57.96	1491	194	1.74	49.95	1.30	56.57	1496
130	1.77	46.46	1.21	54.78	1499	196					
132	1.77	46.47	1.21	54.79	1506	198					
134	1.82	40.74	1.06	51.51	1517	200					
136	1.76	47.44	1.24	55.30	1503	202					
138	1.70	54.66	1.43	58.77	1489	204					
140	1.71	54.08	1.41	58.51	1490	206					
142	1.76	47.99	1.25	55.58	1500	208	1.49	96.18	2.51	71.49	
144	1.79	44.16	1.15	53.52	1508	210	1.52	88.01	2.29	69.65	
146	1.81	41.55	1.08	52.00	1531	212	1.58	75.91	1.98	66.44	
148	1.68	57.40	1.50	59.95	1486	214	1.60	71.58	1.87	65.11	
150	1.76	46.85	1.22	54.99	1498	216	1.62	68.20	1.78	64.01	
152	1.70	55.14	1.44	58.98	1489	218	1.65	63.12	1.65	62.21	
154	1.71	54.14	1.41	58.53	1487	220	1.69	55.93	1.46	59.32	
156	1.72	51.76	1.35	57.44	1489	222	1.72	52.91	1.38	57.97	
158	1.73	51.27	1.34	57.21	1490	224	1.67	58.74	1.53	60.50	
160	1.87	36.12	0.94	48.50	1502	226	1.69	57.09	1.49	59.82	
162	1.69	56.54	1.47	59.58	1484	228	1.69	56.15	1.46	59.42	
164	1.67	58.74	1.53	60.50	1482	230	1.69	56.90	1.48	59.74	
166	1.67	58.62	1.53	60.45	1483	232	1.72	52.64	1.37	57.85	
168	1.73	50.61	1.32	56.89	1492	234	1.71	54.08	1.41	58.51	
170	1.74	50.07	1.31	56.62	1494	236	1.73	51.27	1.34	57.21	1501
172	1.72	51.90	1.35	57.51	1493	238	1.71	53.28	1.39	58.15	1501
174	1.68	58.47	1.52	60.39	1486	240	1.70	55.40	1.44	59.09	1497
176	1.71	53.75	1.40	58.36	1489	242	1.69	57.09	1.49	59.82	1495
178	1.72	52.01	1.36	57.56	1492	244	1.72	52.68	1.37	57.87	1503
180	1.69	56.45	1.47	59.55	1488	246	1.73	51.04	1.33	57.10	1507
182	1.71	53.70	1.40	58.34	1490	248	1.74	50.38	1.31	56.78	1515
184	1.80	43.28	1.13	53.02	1504	250	1.75	49.08	1.28	56.13	1513
186	1.75	48.43	1.26	55.80	1500						
188	1.77	46.72	1.22	54.92	1502						
190	1.76	47.64	1.24	55.40	1499						

## HM 53

## HM 53

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.60	71.47	1.86	65.08	1488
2						62	1.59	73.16	1.91	65.61	1488
4						64	1.61	69.33	1.81	64.38	1492
6						66	1.62	66.92	1.74	63.57	1493
8						68	1.61	69.28	1.81	64.37	1493
10						70	1.60	71.25	1.86	65.01	1487
12						72	1.60	71.15	1.86	64.98	1491
14						74	1.64	63.57	1.66	62.37	1495
16						76	1.56	79.91	2.08	67.57	1485
18						78	1.77	45.73	1.19	54.39	1552
20						80	1.82	41.40	1.08	51.91	1557
22	1.48	99.39	2.59	72.16	1495	82	1.84	38.56	1.01	50.13	1560
24	1.50	94.87	2.47	71.21	1491	84	1.84	38.79	1.01	50.28	1559
26	1.48	99.86	2.60	72.25	1491	86	1.80	42.55	1.11	52.60	1550
28	1.49	97.38	2.54	71.74	1487	88	1.54	84.12	2.19	68.69	1494
30	1.48	99.32	2.59	72.14	1487	90	1.77	46.77	1.22	54.95	1531
32	1.49	98.19	2.56	71.91	1488	92	1.85	38.23	1.00	49.92	1557
34	1.49	96.84	2.52	71.63	1487	94	1.57	76.44	1.99	66.59	1489
36	1.50	94.10	2.45	71.05	1489	96	1.57	76.49	1.99	66.60	
38	1.51	92.01	2.40	70.58	1487	98	1.63	66.18	1.73	63.31	
40	1.49	95.78	2.50	71.41	1481	100	1.72	52.08	1.36	57.59	
42	1.50	94.99	2.48	71.24	1481	102					
44	1.53	85.68	2.23	69.08	1484	104	1.59	73.72	1.92	65.78	
46	1.56	80.19	2.09	67.65	1491	106	1.91	33.27	0.87	46.45	
48	1.58	75.14	1.96	66.21	1490	108	1.76	47.43	1.24	55.29	1509
50	1.56	78.42	2.04	67.16	1489	110	1.75	48.33	1.26	55.75	1499
52	1.60	71.71	1.87	65.15	1494	112	1.68	57.98	1.51	60.19	1488
54	1.65	62.24	1.62	61.87	1504	114	1.67	59.71	1.56	60.89	1487
56	1.64	64.58	1.68	62.74	1502	116	1.67	59.57	1.55	60.83	1484
58	1.62	67.32	1.76	63.71	1494	118	1.67	58.93	1.54	60.58	1486
						120	1.66	60.22	1.57	61.09	1483

## HM 53

## HM 53

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.66	60.71	1.58	61.28	1483	184	1.75	48.72	1.27	55.96	1502
124	1.67	59.98	1.56	61.00	1484	186	1.74	49.90	1.30	56.54	1502
126	1.65	62.51	1.63	61.98	1485	188	1.80	42.64	1.11	52.65	1517
128	1.69	56.03	1.46	59.36	1490	190	1.82	40.89	1.07	51.60	1525
130	1.75	48.28	1.26	55.73	1504	192	1.97	28.08	0.73	42.27	1560
132	1.76	47.66	1.24	55.41	1508	194	1.95	29.47	0.77	43.45	1563
134	1.74	49.77	1.30	56.48	1502	196	2.11	19.75	0.51	33.99	
136	1.69	56.69	1.48	59.65	1494	198	2.16	17.19	0.45	30.95	
138	1.68	58.12	1.52	60.24	1488	200	2.23	14.01	0.37	26.75	
140	1.75	48.55	1.27	55.87	1502						
142	1.76	47.48	1.24	55.32	1503						
144	1.71	54.13	1.41	58.53	1494						
146	1.68	58.29	1.52	60.31	1487						
148	1.73	51.29	1.34	57.22	1494						
150	1.71	54.25	1.41	58.58	1490						
152	1.65	61.89	1.61	61.74	1484						
154	1.65	62.71	1.64	62.05	1483						
156	1.69	56.48	1.47	59.56	1485						
158	1.68	57.85	1.51	60.13	1485						
160	1.67	59.01	1.54	60.61	1484						
162	1.69	56.67	1.48	59.64	1486						
164	1.71	54.00	1.41	58.47	1489						
166	1.70	54.87	1.43	58.86	1489						
168	1.71	54.33	1.42	58.62	1491						
170	1.72	51.76	1.35	57.44	1496						
172	1.77	46.62	1.22	54.86	1505						
174	1.83	40.11	1.05	51.12	1518						
176	1.75	48.46	1.26	55.82	1503						
178	1.70	54.87	1.43	58.86	1489						
180	1.68	57.79	1.51	60.11	1485						
182	1.68	57.30	1.49	59.91	1490						

## HM 54

## HM 54

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						64	1.65	62.59	1.63	62.01	1493
2						66	1.60	71.16	1.86	64.98	1484
4						68	1.59	72.79	1.90	65.49	1486
6						70	1.59	72.66	1.89	65.45	1489
8						72	1.66	60.75	1.58	61.30	1524
10						74	1.82	41.14	1.07	51.76	1530
12						76	1.72	51.77	1.35	57.45	1479
14	1.45	111.48	2.91	74.40	1494	78	1.61	68.50	1.79	64.11	1488
16	1.45	110.23	2.87	74.19	1484	80	1.61	69.70	1.82	64.51	1488
18	1.49	95.74	2.50	71.40	1484	82	1.68	58.08	1.51	60.23	1503
20	1.46	105.83	2.76	73.40	1484	84	1.65	63.12	1.65	62.20	1495
22	1.47	103.22	2.69	72.91	1486	86	1.67	59.74	1.56	60.90	1495
24	1.45	110.24	2.87	74.19	1483	88	1.64	64.64	1.69	62.76	1489
26	1.43	118.42	3.09	75.54	1479	90	1.61	69.96	1.82	64.59	1483
28	1.41	126.21	3.29	76.69	1477	92	1.60	70.80	1.85	64.86	1485
30	1.42	119.52	3.12	75.71	1477	94	1.61	68.68	1.79	64.17	1484
32	1.42	120.09	3.13	75.79	1477	96					
34	1.43	115.67	3.02	75.10	1477	98	1.66	60.51	1.58	61.21	1508
36	1.41	126.32	3.29	76.71	1476	100	1.71	53.58	1.40	58.28	1539
38	1.43	117.70	3.07	75.42	1475	102	1.67	58.69	1.53	60.48	1532
40	1.47	102.30	2.67	72.73	1475	104	1.65	61.72	1.61	61.67	
42	1.54	83.04	2.17	68.41	1481	106	1.65	61.80	1.61	61.71	
44	1.54	83.30	2.17	68.47	1481	108	1.62	67.06	1.75	63.62	1489
46	1.57	77.53	2.02	66.90	1483	110	1.68	57.77	1.51	60.10	1495
48	1.61	70.19	1.83	64.67	1491	112	1.67	59.95	1.56	60.99	1502
50	1.65	62.95	1.64	62.14	1493	114	1.59	72.71	1.90	65.47	1486
52	1.62	66.83	1.74	63.54	1493	116	1.66	60.29	1.57	61.12	1496
54	1.60	70.75	1.84	64.85	1487	118	1.75	48.86	1.27	56.02	1496
56	1.57	77.49	2.02	66.89	1479	120	1.61	68.97	1.80	64.26	1483
58	1.55	82.04	2.14	68.14	1476	122	1.59	72.84	1.90	65.51	1482
60	1.58	75.95	1.98	66.45	1483	124	1.61	69.27	1.81	64.36	1483
62	1.66	60.78	1.58	61.31	1496	126	1.61	68.54	1.79	64.12	1484
						128	1.63	65.58	1.71	63.10	1485

## HM 54

## HM 54

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
130	1.63	66.58	1.74	63.45	1485	196	1.87	35.93	0.94	48.37	1608
132					1538	198	1.92	31.84	0.83	45.36	1623
134	1.64	64.36	1.68	62.66	1493	200					
136	1.72	52.26	1.36	57.68	1511	202					
138	1.68	57.17	1.49	59.85	1499	204					
140	1.61	69.60	1.81	64.47	1485	206	1.94	30.82	0.80	44.55	1528
142	1.66	60.40	1.57	61.16	1494	208	1.98	27.76	0.72	41.99	1527
144	1.71	53.79	1.40	58.38	1504	210	1.92	32.01	0.83	45.49	1573
146	1.79	43.69	1.14	53.25	1525	212	1.95	30.00	0.78	43.89	1571
148	1.83	40.37	1.05	51.28	1530	214	1.93	30.99	0.81	44.69	1569
150	1.80	42.55	1.11	52.59	1528	216	1.94	30.43	0.79	44.24	1569
152	1.91	33.23	0.87	46.42	1566	218	1.95	29.53	0.77	43.50	1569
154	1.90	33.56	0.88	46.67	1563	220	1.93	31.71	0.83	45.26	1570
156	1.89	34.42	0.90	47.30	1563	222	1.91	32.52	0.85	45.89	1571
158	1.89	34.18	0.89	47.12	1562	224	1.89	34.28	0.89	47.19	1567
160	1.94	30.93	0.81	44.65	1561	226	1.91	32.92	0.86	46.19	1523
162	1.88	35.59	0.93	48.13	1567	228	1.91	33.05	0.86	46.29	1570
164	1.90	33.89	0.88	46.91	1563	230	1.92	31.98	0.83	45.47	1571
166	1.89	34.67	0.90	47.48	1561	232	1.92	32.34	0.84	45.75	1570
168	1.91	33.27	0.87	46.45	1565	234	1.90	33.54	0.87	46.65	1568
170	1.93	31.56	0.82	45.15	1564	236	1.93	31.28	0.82	44.92	1573
172	1.90	33.77	0.88	46.83	1564	238	1.94	30.89	0.81	44.61	1573
174	1.91	32.99	0.86	46.24	1563	240	1.92	31.96	0.83	45.45	1552
176	1.90	33.51	0.87	46.63	1564	242	1.97	28.37	0.74	42.52	1571
178	1.94	30.89	0.81	44.61	1565	244	1.94	30.44	0.79	44.25	1518
180	1.90	34.07	0.89	47.04	1565	246	1.95	29.96	0.78	43.86	1521
182	1.91	32.72	0.85	46.04	1567	248	2.01	25.92	0.68	40.33	1543
184	1.91	32.56	0.85	45.91	1568	250	2.03	24.70	0.64	39.17	1557
186	1.95	29.57	0.77	43.54	1560	252	2.03	24.35	0.63	38.84	1562
188	1.91	33.04	0.86	46.28	1570	254	1.93	31.42	0.82	45.03	
190	1.91	33.07	0.86	46.30	1571	256	1.94	30.30	0.79	44.13	1573
192	1.91	33.12	0.86	46.34	1571						
194	1.87	36.31	0.95	48.63							



## Hm 56

## Hm 56

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.68	58.48	1.52	60.39	1486
2						62	1.77	46.59	1.21	54.85	1507
4	1.77	46.82	1.22	54.97		64	1.72	51.80	1.35	57.46	1498
6	1.77	45.74	1.19	54.39		66	1.68	57.56	1.50	60.01	1486
8	1.71	53.51	1.40	58.25	1512	68	1.72	52.50	1.37	57.78	1490
10	1.67	59.63	1.55	60.86	1446	70	1.72	52.08	1.36	57.59	1491
12	1.65	62.96	1.64	62.15		72	1.66	60.70	1.58	61.28	1482
14	1.64	63.78	1.66	62.45	1594	74	1.67	59.78	1.56	60.92	1483
16	1.64	64.42	1.68	62.68	1494	76	1.67	59.65	1.56	60.87	1485
18	1.62	68.05	1.77	63.96	1493	78	1.69	56.39	1.47	59.52	1487
20	1.71	54.26	1.41	58.59	1503	80	1.69	56.86	1.48	59.72	1488
22	1.85	38.23	1.00	49.92	1551	82	1.70	55.44	1.45	59.11	1489
24	1.65	61.93	1.61	61.76	1486	84	1.71	54.04	1.41	58.49	1489
26	1.69	57.09	1.49	59.82	1490	86	1.75	48.14	1.26	55.66	1495
28	1.67	59.32	1.55	60.74	1488	88	1.76	47.86	1.25	55.52	1502
30	1.74	49.66	1.29	56.42	1503	90	1.82	40.96	1.07	51.64	1519
32	1.73	50.86	1.33	57.01	1499	92	1.75	49.12	1.28	56.15	1504
34	1.73	51.17	1.33	57.16	1500	94	1.69	56.38	1.47	59.52	1489
36	1.75	48.11	1.25	55.64	1494	96					
38	1.71	53.58	1.40	58.28	1488	98					
40	1.67	59.50	1.55	60.81	1485	100					
42	1.68	58.10	1.51	60.24	1486	102					
44	1.68	57.42	1.50	59.96	1484	104	1.56	79.76	2.08	67.53	
46	1.68	58.40	1.52	60.36	1484	106	1.62	67.08	1.75	63.62	
48	1.68	58.44	1.52	60.38	1482	108	1.65	62.10	1.62	61.82	1497
50	1.67	58.63	1.53	60.45	1484	110	1.63	66.46	1.73	63.41	1495
52	1.70	54.91	1.43	58.88	1487	112	1.74	49.81	1.30	56.50	1504
54	1.77	46.04	1.20	54.55	1504	114	1.59	72.72	1.90	65.47	1482
56	1.76	47.30	1.23	55.22	1507	116	1.59	72.32	1.89	65.35	1484
58	1.74	49.54	1.29	56.36	1501	118	1.65	63.28	1.65	62.26	1493
						120	1.65	62.22	1.62	61.87	1491

## Hm 56

## Hm 56

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.64	64.27	1.68	62.63	1493	184	1.63	65.18	1.70	62.95	1495
124	1.61	70.29	1.83	64.70	1486	186	1.65	62.53	1.63	61.98	1501
126	1.67	59.28	1.55	60.72	1495	188	1.70	54.82	1.43	58.84	1510
128	1.61	68.48	1.79	64.10	1488	190	1.69	56.23	1.47	59.45	1513
130	1.60	70.48	1.84	64.76	1485	192	1.71	54.19	1.41	58.56	1516
132	1.68	57.87	1.51	60.14	1496	194	1.63	65.26	1.70	62.99	
134	1.67	60.09	1.57	61.04	1495	196	1.69	56.78	1.48	59.68	1456
136	1.74	49.26	1.28	56.23	1509	198	1.69	57.02	1.49	59.79	
138	1.66	60.80	1.59	61.32	1501	200					
140	1.66	61.00	1.59	61.40	1493	202	1.86	37.34	0.97	49.33	
142	1.64	63.41	1.65	62.31	1491	204	1.87	36.47	0.95	48.74	
144	1.64	63.38	1.65	62.30	1490	206	1.74	49.76	1.30	56.47	
146	1.66	60.86	1.59	61.34	1495	208	1.70	54.46	1.42	58.68	
148	1.66	60.94	1.59	61.37	1494	210	1.72	52.56	1.37	57.81	
150	1.67	59.06	1.54	60.63	1499	212	1.73	50.71	1.32	56.94	
152	1.69	55.81	1.46	59.27	1499	214	1.76	47.07	1.23	55.10	
154	1.70	54.58	1.42	58.73	1501	216	1.76	47.31	1.23	55.23	
156	1.67	59.28	1.55	60.72	1500	218	1.75	48.99	1.28	56.09	
158	1.67	59.97	1.56	60.99	1499	220	1.85	37.89	0.99	49.69	1509
160	1.65	62.36	1.63	61.92	1489	222	1.84	39.05	1.02	50.45	1509
162	1.67	59.63	1.55	60.86	1494	224	1.82	41.17	1.07	51.77	1508
164	1.70	54.57	1.42	58.73	1504	226	1.79	43.95	1.15	53.40	1474
166	1.70	54.87	1.43	58.86	1506	228	1.75	48.26	1.26	55.72	1473
168	1.68	57.93	1.51	60.17	1501	230	1.75	48.66	1.27	55.93	1486
170	1.65	63.20	1.65	62.23	1493	232	1.81	42.39	1.11	52.50	1507
172	1.67	59.78	1.56	60.92	1497	234	1.82	40.79	1.06	51.54	1500
174	1.73	51.03	1.33	57.09	1500	236	1.81	41.89	1.09	52.20	1500
176	1.67	59.33	1.55	60.74	1504	238	1.79	43.85	1.14	53.34	1500
178	1.66	60.19	1.57	61.08	1500	240	1.75	48.30	1.26	55.74	1483
180	1.63	65.55	1.71	63.09	1497	242	1.71	53.61	1.40	58.30	1472
182	1.64	63.32	1.65	62.28	1495	244	1.71	54.14	1.41	58.53	1482

# Hm 56

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.72	52.39	1.37	57.74	1483
248	1.79	44.59	1.16	53.76	1500
250	1.81	41.80	1.09	52.15	1510
252	1.81	41.52	1.08	51.98	1507
254	1.83	40.09	1.05	51.10	1511
256	1.79	44.36	1.16	53.63	1510
258	1.80	43.17	1.13	52.96	1510
260	1.84	39.26	1.02	50.59	1516
262	1.79	44.22	1.15	53.55	1508
264	1.82	41.39	1.08	51.90	1511
266	1.80	43.34	1.13	53.05	1507
268	1.77	45.74	1.19	54.39	1501
270	1.75	48.31	1.26	55.74	1498
272	1.72	51.88	1.35	57.50	1489
274	1.76	47.52	1.24	55.34	1498
276	1.75	48.08	1.25	55.63	1501
278	1.82	40.79	1.06	51.54	1527
280	1.80	42.97	1.12	52.84	1511
282	1.78	44.86	1.17	53.91	1505
284	1.86	37.28	0.97	49.29	

## HM 58

## HM 58

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.54	83.30	2.17	68.47	1486
2						62	1.60	70.98	1.85	64.92	1490
4						64	1.58	75.86	1.98	66.42	1486
6						66	1.57	76.87	2.00	66.72	1484
8						68	1.53	85.83	2.24	69.12	1478
10						70	1.56	78.39	2.04	67.15	1479
12						72	1.55	82.43	2.15	68.25	1478
14						74	1.57	77.50	2.02	66.89	1486
16						76	1.62	66.93	1.75	63.57	1495
18	1.52	87.85	2.29	69.61	1506	78	1.62	67.95	1.77	63.92	1497
20	1.52	88.73	2.31	69.82	1496	80	1.64	64.15	1.67	62.58	1502
22	1.51	91.50	2.39	70.46	1489	82	1.68	58.17	1.52	60.27	1506
24	1.49	95.75	2.50	71.40	1488	84	1.72	51.95	1.35	57.53	1515
26	1.56	78.67	2.05	67.23	1490	86	1.74	50.21	1.31	56.70	1519
28	1.55	81.79	2.13	68.08	1488	88	1.75	48.33	1.26	55.76	1526
30	1.53	85.79	2.24	69.11	1487	90	1.77	46.00	1.20	54.53	1526
32	1.58	75.21	1.96	66.23	1484	92	1.78	45.45	1.18	54.23	1528
34	1.57	76.32	1.99	66.56	1489	94	1.75	48.85	1.27	56.02	1532
36	1.58	74.58	1.94	66.04	1492	96	1.74	49.88	1.30	56.53	
38	1.56	78.56	2.05	67.20	1490	98	1.79	43.97	1.15	53.41	
40	1.56	79.83	2.08	67.55	1489	100					
42	1.55	81.04	2.11	67.88	1490	102					
44	1.54	84.60	2.21	68.81	1488	104					
46	1.52	89.56	2.34	70.02	1485	106					
48	1.55	82.77	2.16	68.34	1484	108	1.81	42.45	1.11	52.53	1529
50	1.53	85.38	2.23	69.00	1481	110	1.80	43.03	1.12	52.87	1538
52	1.53	86.49	2.26	69.28	1479	112	1.80	43.43	1.13	53.11	1539
54	1.50	94.45	2.46	71.12	1477	114	1.83	40.16	1.05	51.15	1535
56	1.51	92.59	2.41	70.71	1477	116	1.81	41.94	1.09	52.24	1535
58	1.53	87.23	2.27	69.46	1479	118	1.81	41.79	1.09	52.14	1535
						120	1.80	43.04	1.12	52.88	1534

## HM 58

## HM 58

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.81	42.29	1.10	52.44	1535	184	1.78	44.61	1.16	53.77	1536
124	1.79	43.99	1.15	53.42	1532	186	1.82	41.29	1.08	51.84	1535
126	1.80	43.15	1.13	52.94	1533	188	1.80	42.51	1.11	52.57	1536
128	1.78	44.96	1.17	53.97	1533	190	1.81	42.15	1.10	52.36	1536
130	1.81	41.99	1.09	52.26	1532	192	1.79	44.11	1.15	53.49	1538
132	1.82	40.94	1.07	51.63	1530	194	1.80	43.07	1.12	52.90	1539
134	1.79	43.70	1.14	53.26	1530	196	1.81	42.28	1.10	52.43	
136	1.79	43.97	1.15	53.41	1531	198	1.74	50.02	1.30	56.60	
138	1.81	42.47	1.11	52.55	1531	200	1.77	46.07	1.20	54.57	
140	1.77	45.97	1.20	54.52	1531	202	1.79	43.87	1.14	53.36	
142	1.77	45.76	1.19	54.40	1529	204	1.74	49.65	1.29	56.42	
144	1.79	44.18	1.15	53.53	1530	206	1.79	44.37	1.16	53.64	
146	1.80	43.43	1.13	53.11	1530	208	1.85	37.99	0.99	49.76	
148	1.82	41.17	1.07	51.77	1532	210	1.83	40.13	1.05	51.13	
150	1.81	41.97	1.09	52.25	1530	212	1.86	37.36	0.97	49.34	1539
152	1.78	44.66	1.16	53.80	1530	214	1.86	36.77	0.96	48.95	1534
154	1.79	44.58	1.16	53.75	1530	216	1.81	41.75	1.09	52.12	1535
156	1.79	44.26	1.15	53.58	1532	218	1.84	39.25	1.02	50.58	1536
158	1.78	45.15	1.18	54.07	1532	220	1.82	40.63	1.06	51.44	1552
160	1.79	43.59	1.14	53.20	1533	222	1.81	41.73	1.09	52.11	1540
162	1.79	44.54	1.16	53.73	1533	224	1.80	43.10	1.12	52.92	1538
164	1.80	43.36	1.13	53.07	1533	226	1.86	37.39	0.97	49.36	1538
166	1.79	43.78	1.14	53.31	1533	228	1.83	39.78	1.04	50.91	1537
168	1.80	43.10	1.12	52.91	1532	230	1.83	40.40	1.05	51.30	1530
170	1.81	42.19	1.10	52.38	1533	232	1.83	40.31	1.05	51.24	1539
172	1.82	40.76	1.06	51.52	1535	234	1.82	40.61	1.06	51.43	1539
174	1.82	41.21	1.07	51.79	1537	236	1.81	41.99	1.09	52.26	1540
176	1.81	42.14	1.10	52.35	1536	238	1.82	41.17	1.07	51.77	1539
178	1.81	42.27	1.10	52.43	1537	240	1.81	41.66	1.09	52.07	1539
180	1.81	42.34	1.10	52.47	1536	242	1.83	40.15	1.05	51.14	1533
182	1.79	43.89	1.14	53.37	1535	244	1.84	39.36	1.03	50.65	1541

# HM 58

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.82	41.11	1.07	51.73	1541
248	1.83	40.18	1.05	51.16	1544
250	1.83	39.78	1.04	50.91	1542
252	1.85	38.08	0.99	49.82	1541
254	1.83	39.68	1.03	50.85	1546
256	1.90	33.37	0.87	46.53	1567
258	1.82	41.07	1.07	51.71	1537
260	1.83	40.13	1.05	51.13	
262	1.82	40.54	1.06	51.39	
264	1.84	39.13	1.02	50.50	1551
266	1.84	39.26	1.02	50.58	1557
268	1.80	42.74	1.11	52.70	
270	1.78	44.89	1.17	53.93	1521
272	1.85	37.97	0.99	49.75	1580
274					1526

## HM 59

## HM 59

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.55	82.28	2.15	68.21	1482
2						62	1.60	72.20	1.88	65.31	1488
4						64	1.59	72.70	1.90	65.47	1487
6						66	1.60	70.55	1.84	64.78	1487
8						68	1.56	78.58	2.05	67.20	1485
10						70	1.56	79.55	2.07	67.47	1485
12						72	1.54	83.85	2.19	68.62	1480
14						74	1.60	70.99	1.85	64.92	1488
16	1.57	77.86	2.03	67.00	1512	76	1.55	81.29	2.12	67.95	1477
18	1.57	77.54	2.02	66.91	1503	78	1.51	90.27	2.35	70.18	1475
20	1.56	79.50	2.07	67.46	1497	80	1.54	83.86	2.19	68.62	1477
22	1.64	64.17	1.67	62.59	1493	82	1.55	81.91	2.14	68.11	1478
24	1.64	63.79	1.66	62.45	1491	84	1.55	80.69	2.10	67.78	1477
26	1.67	58.82	1.53	60.53	1493	86	1.53	85.35	2.23	69.00	1478
28	1.57	77.44	2.02	66.88	1484	88	1.53	85.95	2.24	69.15	1478
30	1.65	62.35	1.63	61.92	1490	90	1.62	66.97	1.75	63.59	1495
32	1.61	68.86	1.80	64.23	1485	92	1.66	60.18	1.57	61.08	1509
34	1.59	72.30	1.89	65.34	1483	94	1.69	55.73	1.45	59.24	
36	1.59	74.03	1.93	65.87	1483	96					
38	1.57	76.90	2.01	66.72	1483	98					1527
40	1.56	80.46	2.10	67.72	1480	100					
42	1.54	84.07	2.19	68.67	1478	102					
44	1.50	95.55	2.49	71.36	1473	104					
46	1.49	96.94	2.53	71.65	1474	106					
48	1.51	92.02	2.40	70.58	1473	108	1.71	53.05	1.38	58.04	
50	1.46	106.65	2.78	73.55	1474	110	1.77	46.78	1.22	54.95	1521
52	1.50	94.46	2.46	71.12	1475	112	1.84	38.77	1.01	50.27	1534
54	1.51	90.52	2.36	70.24	1474	114	1.84	38.87	1.01	50.33	1539
56	1.49	96.09	2.51	71.47	1476	116	1.83	39.66	1.03	50.84	1540
58	1.58	75.76	1.98	66.39	1483	118	1.86	37.31	0.97	49.31	1540
						120	1.87	36.33	0.95	48.65	1541

## HM 59

## HM 59

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.93	31.36	0.82	44.99	1532	184	1.87	36.58	0.95	48.82	1551
124	1.85	37.71	0.98	49.58	1544	186	1.88	35.43	0.92	48.02	1552
126	1.91	33.22	0.87	46.41	1535	188	1.98	27.40	0.71	41.67	1545
128	1.85	37.95	0.99	49.74	1546	190	1.88	35.77	0.93	48.26	1554
130	1.85	37.67	0.98	49.55	1543	192	1.88	35.47	0.92	48.05	1557
132	1.88	35.66	0.93	48.18	1543	194	1.85	37.74	0.98	49.60	1558
134	1.85	37.89	0.99	49.70	1541	196	1.82	40.93	1.07	51.63	
136	1.83	39.59	1.03	50.79	1544	198	1.81	41.79	1.09	52.14	1569
138	1.84	39.05	1.02	50.45	1544	200	1.88	35.12	0.92	47.80	
140	1.85	38.20	1.00	49.90	1545	202					
142	1.84	38.60	1.01	50.16	1545	204	1.84	38.58	1.01	50.15	
144	1.86	37.38	0.97	49.36	1544	206	1.81	42.37	1.10	52.49	
146	1.84	38.61	1.01	50.16	1546	208	1.88	35.37	0.92	47.98	
148	1.88	35.71	0.93	48.22	1545	210	1.90	33.73	0.88	46.80	1568
150	1.87	36.32	0.95	48.64	1545	212	1.92	32.14	0.84	45.59	1566
152	1.87	36.52	0.95	48.77	1546	214	1.91	32.57	0.85	45.92	1565
154	1.86	37.56	0.98	49.48	1546	216	1.92	32.44	0.85	45.82	1564
156	1.86	37.26	0.97	49.28	1547	218	1.90	34.03	0.89	47.02	1561
158	1.87	35.99	0.94	48.41	1549	220	1.90	33.62	0.88	46.71	1556
160	1.87	36.62	0.95	48.84	1550	222	1.90	33.37	0.87	46.52	1561
162	1.86	37.17	0.97	49.22	1549	224	1.91	33.28	0.87	46.46	1559
164	1.88	35.06	0.91	47.76	1548	226	1.88	35.23	0.92	47.88	1559
166	1.86	37.53	0.98	49.46	1550	228	1.91	32.96	0.86	46.22	1555
168	1.89	34.64	0.90	47.46	1548	230	1.90	34.12	0.89	47.08	1560
170	1.85	37.79	0.99	49.63	1549	232	1.90	33.46	0.87	46.59	1558
172	1.88	35.15	0.92	47.82	1550	234	1.89	34.44	0.90	47.31	1559
174	1.87	36.16	0.94	48.53	1548	236	1.92	32.07	0.84	45.54	1558
176	1.90	33.82	0.88	46.86	1547	238	1.91	33.19	0.87	46.39	1562
178	1.87	36.04	0.94	48.44	1551	240	1.88	35.18	0.92	47.84	1559
180	1.88	35.71	0.93	48.21	1554	242	1.88	35.23	0.92	47.88	1560
182	1.85	38.39	1.00	50.02	1552	244	1.88	35.20	0.92	47.86	1558



# HM 59

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.88	35.26	0.92	47.90	1557
248	1.91	32.86	0.86	46.14	1559
250	1.89	34.76	0.91	47.55	1561
252	1.92	31.80	0.83	45.33	1559
254	1.89	34.48	0.90	47.34	1564
256					1554
258	1.88	35.32	0.92	47.95	1559
260	1.92	32.32	0.84	45.73	1563
262	1.88	35.02	0.91	47.73	1561
264	1.91	33.14	0.86	46.36	1560
266	1.88	35.24	0.92	47.89	1563
268	1.89	34.28	0.89	47.19	1564
270	1.90	33.47	0.87	46.60	1566
272	1.90	33.57	0.88	46.67	1565
274	1.89	34.79	0.91	47.56	1563
276	1.95	29.93	0.78	43.84	1565
278	1.87	36.44	0.95	48.72	1564
280	1.91	32.84	0.86	46.13	1564
282	1.91	33.04	0.86	46.28	1573
284	1.88	35.63	0.93	48.16	
286	1.85	38.38	1.00	50.02	
288	1.90	33.65	0.88	46.74	

## HM 60

## HM 60

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.62	67.98	1.77	63.93	1498
2						62	1.59	73.29	1.91	65.65	1496
4						64	1.58	75.48	1.97	66.31	1496
6	1.48	99.20	2.59	72.12		66	1.60	70.42	1.84	64.74	1495
8	1.63	65.54	1.71	63.09	1499	68	1.61	69.75	1.82	64.52	1496
10	1.59	74.07	1.93	65.89	1495	70	1.62	67.02	1.75	63.60	1495
12	1.63	65.32	1.70	63.01	1499	72	1.62	67.18	1.75	63.66	1495
14	1.67	59.31	1.55	60.73	1502	74	1.64	64.73	1.69	62.80	1497
16	1.65	63.25	1.65	62.25	1499	76	1.64	63.98	1.67	62.52	1498
18	1.61	69.52	1.81	64.45	1503	78	1.65	62.31	1.62	61.90	1498
20	1.61	69.48	1.81	64.43	1503	80	1.65	62.28	1.62	61.89	1497
22	1.62	67.73	1.77	63.85	1501	82	1.61	68.64	1.79	64.15	1495
24	1.60	71.37	1.86	65.05	1500	84	1.60	70.37	1.83	64.72	1496
26	1.59	72.21	1.88	65.31	1494	86	1.62	67.97	1.77	63.93	1494
28	1.60	71.77	1.87	65.17	1497	88	1.58	74.36	1.94	65.97	1491
30	1.61	69.57	1.81	64.46	1499	90	1.59	73.07	1.91	65.58	1491
32	1.61	68.84	1.79	64.22	1498	92	1.62	68.40	1.78	64.07	1493
34	1.60	71.75	1.87	65.17	1495	94	1.56	80.20	2.09	67.65	
36	1.59	72.21	1.88	65.31	1495	96	1.58	74.27	1.94	65.95	
38	1.54	84.00	2.19	68.65	1490	98	1.66	61.04	1.59	61.41	
40	1.60	70.92	1.85	64.90	1494	100					
42	1.61	70.15	1.83	64.65	1493	102					
44	1.59	74.02	1.93	65.87	1494	104	1.58	75.71	1.97	66.38	
46	1.58	75.59	1.97	66.34	1491	106	1.53	85.48	2.23	69.03	
48	1.60	70.49	1.84	64.77	1496	108	1.60	71.27	1.86	65.02	1495
50	1.60	70.60	1.84	64.80	1497	110	1.64	64.84	1.69	62.83	1499
52	1.61	69.25	1.81	64.36	1502	112	1.62	68.07	1.77	63.96	1495
54	1.61	70.22	1.83	64.68	1501	114	1.60	71.22	1.86	65.00	1491
56	1.63	65.34	1.70	63.01	1500	116	1.58	75.97	1.98	66.45	1490
58	1.60	70.62	1.84	64.81	1497	118	1.60	71.86	1.87	65.20	1493
						120	1.60	70.40	1.84	64.73	1496

## HM 60

## HM 60

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.61	68.69	1.79	64.17	1498	184	1.73	51.21	1.34	57.18	1514
124	1.65	62.84	1.64	62.10	1501	186	1.70	55.71	1.45	59.23	1515
126	1.69	56.39	1.47	59.52	1506	188	1.74	49.97	1.30	56.58	1522
128	1.78	45.37	1.18	54.19	1510	190	1.83	40.41	1.05	51.31	1542
130	1.72	52.27	1.36	57.68	1511	192	1.83	40.13	1.05	51.13	1540
132	1.70	54.47	1.42	58.68	1506	194	1.85	38.22	1.00	49.91	1542
134	1.69	56.85	1.48	59.72	1502	196	1.77	45.89	1.20	54.48	
136	1.71	53.91	1.41	58.43	1503	198	1.82	41.31	1.08	51.86	1528
138	1.71	53.48	1.39	58.23	1503	200	1.87	36.11	0.94	48.50	1536
140	1.68	57.85	1.51	60.14	1499	202	1.79	43.55	1.14	53.18	
142	1.67	58.76	1.53	60.51	1497	204	1.79	43.96	1.15	53.41	
144	1.63	65.05	1.70	62.91	1491	206	1.77	46.67	1.22	54.89	
146	1.63	66.22	1.73	63.32	1490	208	1.86	37.59	0.98	49.50	
148	1.64	63.34	1.65	62.29	1491	210	1.85	38.13	0.99	49.86	
150	1.65	62.46	1.63	61.96	1491	212	1.87	36.12	0.94	48.50	
152	1.64	63.54	1.66	62.36	1489	214	1.88	35.04	0.91	47.74	1553
154	1.62	67.35	1.76	63.72	1488	216	1.85	38.21	1.00	49.91	1552
156	1.62	67.02	1.75	63.60	1486	218	1.86	37.53	0.98	49.46	1550
158	1.62	67.10	1.75	63.63	1486	220	1.86	36.84	0.96	48.99	1549
160	1.61	69.00	1.80	64.27	1484	222	1.85	37.62	0.98	49.52	1547
162	1.60	71.19	1.86	64.99	1484	224	1.86	37.19	0.97	49.23	1548
164	1.58	74.42	1.94	65.99	1483	226	1.86	37.19	0.97	49.23	1548
166	1.60	72.02	1.88	65.25	1483	228	1.86	37.59	0.98	49.50	1550
168	1.61	68.71	1.79	64.18	1485	230	1.86	36.79	0.96	48.96	1550
170	1.62	66.72	1.74	63.50	1485	232	1.85	37.74	0.98	49.60	1550
172	1.61	69.55	1.81	64.46	1482	234	1.87	36.58	0.95	48.82	1548
174	1.58	74.40	1.94	65.99	1483	236	1.86	37.44	0.98	49.40	1551
176	1.60	71.26	1.86	65.01	1483	238	1.86	37.03	0.97	49.12	1549
178	1.63	66.67	1.74	63.48	1483	240	1.87	36.30	0.95	48.63	1550
180	1.62	67.01	1.75	63.60	1490	242	1.91	33.26	0.87	46.44	1553
182	1.68	57.79	1.51	60.11	1508	244	1.88	34.97	0.91	47.69	1550

# HM 60

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.87	35.83	0.93	48.30	1554
248	1.86	36.74	0.96	48.93	1552
250	1.84	38.82	1.01	50.30	1552
252	1.85	37.62	0.98	49.52	1553
254	1.86	36.96	0.96	49.08	1553
256	1.86	37.12	0.97	49.18	1550
258	1.86	37.31	0.97	49.31	1550
260	1.85	37.76	0.98	49.61	1549
262	1.86	37.15	0.97	49.21	1549
264	1.85	37.86	0.99	49.68	1548
266	1.86	36.76	0.96	48.94	1550
268	1.83	39.94	1.04	51.02	1550
270	1.86	37.08	0.97	49.16	1547
272	1.87	36.26	0.95	48.60	1551
274	1.87	36.59	0.95	48.82	1551
276	1.85	37.63	0.98	49.52	1552
278	1.87	36.35	0.95	48.66	1549
280	1.87	36.52	0.95	48.78	1548
282	1.88	35.65	0.93	48.17	1549
284	1.86	37.38	0.97	49.36	1548
286	1.86	36.87	0.96	49.02	1552
288	1.86	37.06	0.97	49.14	1555
290	1.89	34.51	0.90	47.36	1554
292	1.78	44.74	1.17	53.85	
294	1.83	39.52	1.03	50.75	
296	1.88	35.69	0.93	48.20	

## HM 63

## HM 63

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						62	1.59	72.90	1.90	65.53	1490
2						64	1.60	70.94	1.85	64.91	1491
4						66	1.61	69.06	1.80	64.29	1493
6						68	1.60	71.86	1.87	65.20	1496
8	1.74	49.99	1.30	56.59	1535	70	1.60	71.19	1.86	64.99	1491
10	1.74	50.19	1.31	56.69	1520	72	1.60	71.03	1.85	64.94	1494
12	1.72	52.09	1.36	57.60	1510	74	1.63	65.76	1.71	63.16	1497
14	1.69	56.78	1.48	59.69	1505	76	1.67	59.16	1.54	60.67	1505
16	1.68	57.28	1.49	59.89	1501	78	1.70	55.28	1.44	59.04	1509
18	1.67	59.99	1.56	61.00	1498	80	1.75	48.80	1.27	55.99	1519
20	1.65	62.81	1.64	62.09	1496	82	1.71	53.40	1.39	58.20	1511
22	1.63	65.10	1.70	62.93	1495	84	1.70	55.27	1.44	59.03	1507
24	1.58	75.01	1.96	66.17	1495	86	1.71	53.76	1.40	58.36	1502
26	1.59	73.77	1.92	65.80	1493	88	1.68	58.32	1.52	60.33	1496
28	1.61	70.04	1.83	64.62	1495	90	1.65	62.92	1.64	62.13	1492
30	1.61	68.99	1.80	64.27	1499	92	1.66	60.89	1.59	61.35	1493
32	1.61	68.56	1.79	64.13	1498	94	1.59	72.50	1.89	65.40	
34	1.61	70.14	1.83	64.65	1496	96	1.58	75.75	1.98	66.39	1509
36	1.61	69.42	1.81	64.41	1495	98					1507
38	1.61	69.14	1.80	64.32	1492	100					
40	1.61	69.68	1.82	64.50	1492	102					
42	1.60	70.96	1.85	64.91	1490	104					
44	1.58	75.36	1.97	66.27	1490	106	1.51	92.56	2.41	70.70	
46	1.57	76.80	2.00	66.70	1488	108	1.56	79.02	2.06	67.32	1487
48	1.57	78.31	2.04	67.13	1487	110	1.57	76.50	1.99	66.61	1485
50	1.56	78.58	2.05	67.20	1488	112	1.58	75.60	1.97	66.34	1484
52	1.58	74.64	1.95	66.06	1488	114	1.57	77.38	2.02	66.86	1484
54	1.58	75.30	1.96	66.26	1489	116	1.56	79.69	2.08	67.51	1483
56	1.62	67.36	1.76	63.72	1497	118	1.59	72.36	1.89	65.36	1486
58	1.60	71.86	1.87	65.20	1493	120	1.66	60.34	1.57	61.14	1501
60	1.61	69.38	1.81	64.40	1492	122	1.79	43.96	1.15	53.41	1537
						124	1.79	44.54	1.16	53.74	1547

## HM 63

## HM 63

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
126	1.78	45.26	1.18	54.13	1553	190	1.98	27.42	0.71	41.69	1598
128	1.77	45.82	1.19	54.44	1551	192	1.93	31.52	0.82	45.11	1582
130	1.75	48.63	1.27	55.91	1546	194	1.85	38.43	1.00	50.05	
132	1.85	37.75	0.98	49.61	1564	196	1.82	40.82	1.06	51.56	
134	1.78	44.63	1.16	53.78	1550	198	1.91	32.85	0.86	46.13	
136	1.87	36.25	0.95	48.59	1568	200					
138	1.83	39.78	1.04	50.91	1561	202					
140	1.82	40.59	1.06	51.42	1553	204	1.87	36.66	0.96	48.87	
142	1.89	34.77	0.91	47.55	1571	206	1.83	39.60	1.03	50.80	
144	1.94	30.62	0.80	44.40	1580	208	1.92	32.03	0.84	45.51	1559
146	1.94	30.33	0.79	44.16	1583	210	1.89	34.36	0.90	47.25	1568
148	1.90	33.66	0.88	46.74	1578	212	1.95	29.98	0.78	43.87	1563
150	1.93	31.03	0.81	44.72	1579	214	1.92	32.05	0.84	45.52	1563
152	1.93	31.56	0.82	45.14	1582	216	1.90	33.31	0.87	46.48	1563
154	1.89	34.43	0.90	47.30	1578	218	1.92	31.96	0.83	45.45	1560
156	1.64	64.03	1.67	62.54	1505	220	1.89	34.87	0.91	47.62	1561
158	1.73	51.25	1.34	57.20	1520	222	1.93	31.44	0.82	45.05	1562
160	1.84	38.96	1.02	50.39	1546	224	1.93	31.15	0.81	44.82	1560
162	1.83	39.62	1.03	50.81	1540	226	1.91	32.64	0.85	45.97	1562
164	1.80	42.54	1.11	52.59	1542	228	1.95	30.05	0.78	43.93	1565
166	1.93	31.14	0.81	44.81	1571	230	1.91	33.17	0.86	46.37	1568
168	1.99	26.72	0.70	41.06	1601	232	1.89	34.83	0.91	47.59	1567
170	1.96	29.39	0.77	43.39	1593	234	1.90	33.81	0.88	46.85	1561
172	1.95	30.00	0.78	43.89	1585	236	1.89	34.23	0.89	47.16	1563
174	1.96	28.82	0.75	42.90	1597	238	1.91	32.69	0.85	46.01	1563
176	1.98	27.72	0.72	41.95	1586	240	1.91	32.92	0.86	46.19	1567
178	1.98	27.55	0.72	41.80	1590	242	1.91	33.28	0.87	46.46	1570
180	1.99	27.26	0.71	41.55	1596	244	1.94	30.71	0.80	44.47	1569
182	1.99	27.25	0.71	41.54	1592	246	1.93	31.27	0.82	44.92	1574
184	1.99	27.20	0.71	41.49	1599	248	1.79	43.63	1.14	53.22	
186	1.99	27.29	0.71	41.58	1602	250	1.83	39.62	1.03	50.81	1536
188	1.98	27.80	0.72	42.03	1592	252	1.89	34.88	0.91	47.63	1579

## HM 64

## HM 64

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.71	54.31	1.42	58.61	1498
2	1.84	39.23	1.02	50.57		62	1.68	57.72	1.50	60.08	1497
4	1.83	39.95	1.04	51.02		64	1.71	53.26	1.39	58.14	1506
6	1.83	40.02	1.04	51.06		66	1.69	55.79	1.45	59.26	1499
8	1.91	33.01	0.86	46.26	1568	68	1.69	56.57	1.48	59.60	1500
10	1.89	34.52	0.90	47.37	1550	70	1.72	52.41	1.37	57.74	1504
12	1.89	34.39	0.90	47.28	1563	72	1.71	53.79	1.40	58.38	1504
14	1.92	31.85	0.83	45.37	1574	74	1.76	47.51	1.24	55.33	1520
16	1.98	28.01	0.73	42.20	1550	76	1.83	40.08	1.05	51.10	1540
18	1.89	34.30	0.89	47.21	1568	78	1.86	37.43	0.98	49.39	1548
20	1.95	30.12	0.79	43.99	1595	80	1.86	36.97	0.96	49.08	1547
22	1.86	36.72	0.96	48.91	1552	82	1.91	32.56	0.85	45.92	1566
24	1.84	39.38	1.03	50.66	1550	84	1.89	34.83	0.91	47.59	1562
26	1.85	38.33	1.00	49.99	1552	86	1.89	34.28	0.89	47.19	1565
28	1.93	31.38	0.82	45.00	1571	88	1.95	29.71	0.77	43.65	1579
30	1.91	32.53	0.85	45.90	1565	90	1.86	36.93	0.96	49.06	1573
32	1.80	42.54	1.11	52.59	1535	92	1.85	38.25	1.00	49.94	1547
34	1.76	46.96	1.22	55.04	1519	94	1.92	32.23	0.84	45.67	1568
36	1.70	55.23	1.44	59.02		96	1.91	32.55	0.85	45.91	1566
38	1.76	47.75	1.25	55.46	1546	98	1.95	29.65	0.77	43.60	1575
40	1.79	44.27	1.15	53.58	1553	100	1.90	33.32	0.87	46.49	1571
42						102	1.95	29.90	0.78	43.81	1590
44	1.68	57.70	1.50	60.07		104	1.89	34.36	0.90	47.26	1584
46	1.72	52.77	1.38	57.91		106	1.89	34.57	0.90	47.41	1567
48	1.76	48.00	1.25	55.59		108	1.93	31.61	0.82	45.18	1587
50	1.67	59.86	1.56	60.95	1489	110	1.95	29.64	0.77	43.59	1584
52	1.66	60.28	1.57	61.12	1498	112	1.94	30.49	0.79	44.29	1594
54	1.69	57.11	1.49	59.82	1497	114	1.94	30.52	0.80	44.31	1588
56	1.69	57.04	1.49	59.79	1498	116	1.94	30.65	0.80	44.42	1593
58	1.68	57.32	1.49	59.91	1496	118	1.96	28.84	0.75	42.92	1585
						120	1.95	29.55	0.77	43.52	1582

# HM 64

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.95	29.72	0.77	43.66	1586
124	1.95	29.94	0.78	43.84	1590
126	1.95	29.96	0.78	43.86	1586
128	1.96	29.21	0.76	43.23	1587
130	1.96	29.16	0.76	43.20	1595
132	2.00	26.01	0.68	40.41	1581
134	1.88	35.20	0.92	47.86	
136	1.86	37.18	0.97	49.22	
138	1.90	33.87	0.88	46.90	



## Hm 65

## Hm 65

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.91	32.76	0.85	46.07	1566
2						62	1.93	31.62	0.82	45.19	1576
4						64	1.94	30.78	0.80	44.52	1576
6						66	1.89	34.31	0.89	47.22	1570
8						68	1.78	45.15	1.18	54.07	1532
10						70	1.95	29.85	0.78	43.76	1588
12						72	1.88	35.04	0.91	47.74	1562
14						74	1.78	45.21	1.18	54.10	1529
16	1.96	28.78	0.75	42.87	1539	76	1.94	30.48	0.79	44.28	1589
18	1.98	27.94	0.73	42.15	1614	78	1.87	36.53	0.95	48.79	1558
20	1.95	29.53	0.77	43.50	1595	80	1.82	41.26	1.08	51.83	1544
22	1.97	28.71	0.75	42.81	1602	82	1.86	37.38	0.97	49.36	1541
24	1.97	28.59	0.75	42.71	1580	84	1.87	36.12	0.94	48.50	1557
26	1.89	34.18	0.89	47.13	1588	86	1.96	29.26	0.76	43.28	1587
28	1.79	44.26	1.15	53.58	1572	88	1.93	31.11	0.81	44.79	1582
30	1.90	34.06	0.89	47.03	1556	90	1.94	30.36	0.79	44.19	1586
32	1.86	36.90	0.96	49.03	1564	92	1.96	29.34	0.77	43.35	1587
34	1.90	33.52	0.87	46.64	1573	94	1.87	36.06	0.94	48.46	
36	1.88	35.59	0.93	48.13	1571	96	1.91	33.11	0.86	46.33	1513
38	1.89	34.74	0.91	47.53	1573	98	1.94	30.44	0.79	44.25	1537
40	1.91	33.17	0.87	46.38	1575	100					
42	1.91	32.81	0.86	46.10	1571	102	1.94	30.47	0.79	44.27	
44	1.91	32.59	0.85	45.94	1577	104	1.89	34.48	0.90	47.34	
46	1.92	32.28	0.84	45.70	1573	106	1.85	37.83	0.99	49.66	
48	1.91	32.56	0.85	45.92	1575	108	1.94	30.44	0.79	44.25	1536
50	1.92	32.30	0.84	45.72	1575	110	1.98	27.79	0.72	42.02	1529
52	1.92	32.13	0.84	45.59	1580	112	1.94	30.52	0.80	44.31	1584
54	1.94	30.47	0.79	44.27	1583	114	1.98	27.98	0.73	42.19	1592
56	1.94	30.76	0.80	44.50	1583	116	1.98	27.78	0.72	42.01	1597
58	1.91	33.09	0.86	46.31	1577	118	1.97	28.30	0.74	42.46	1587
	1.90	34.07	0.89	47.05	1566	120	1.97	28.61	0.75	42.72	1587

## Hm 65

## Hm 65

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.98	27.36	0.71	41.64	1596	184	1.97	28.17	0.73	42.34	1593
124	1.96	28.94	0.75	43.01	1594	186	1.97	28.03	0.73	42.23	1592
126	1.98	27.38	0.71	41.66	1599	188	1.89	34.38	0.90	47.27	1590
128	2.00	26.65	0.69	41.00	1602	190	1.94	30.90	0.81	44.62	
130	1.86	37.48	0.98	49.43	1586	192	1.87	36.58	0.95	48.82	
132	1.92	32.04	0.84	45.51		194	1.98	27.47	0.72	41.73	
134	1.94	30.43	0.79	44.24	1579	196	1.89	34.35	0.90	47.25	
136	1.89	34.41	0.90	47.29	1559						
138	1.95	29.56	0.77	43.53	1591						
140	1.97	28.08	0.73	42.27	1593						
142	1.96	29.01	0.76	43.07	1593						
144	1.95	29.80	0.78	43.73	1594						
146	1.99	27.16	0.71	41.46	1598						
148	2.00	26.37	0.69	40.74	1604						
150	1.82	41.21	1.07	51.80	1604						
152	1.92	31.75	0.83	45.29	1536						
154	2.01	25.42	0.66	39.86	1608						
156	1.86	37.57	0.98	49.49	1545						
158	1.91	33.04	0.86	46.28	1574						
160	1.93	31.66	0.83	45.22	1570						
162	1.97	28.38	0.74	42.53							
164	1.96	29.41	0.77	43.40	1583						
166	1.95	30.17	0.79	44.03	1586						
168	1.95	29.78	0.78	43.71	1587						
170	1.97	28.56	0.74	42.68	1588						
172	1.94	30.75	0.80	44.50	1588						
174	1.96	29.07	0.76	43.12	1592						
176	1.99	26.79	0.70	41.12	1592						
178	1.96	28.89	0.75	42.96	1591						
180	1.98	27.46	0.72	41.72	1595						
182	1.97	28.33	0.74	42.49	1596						

## Hm 68

## Hm 68

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.57	77.93	2.03	67.02	1497
2						62	1.54	84.85	2.21	68.87	1492
4						64	1.52	89.04	2.32	69.90	1492
6						66	1.52	88.65	2.31	69.80	1494
8						68	1.54	84.01	2.19	68.66	1494
10						70	1.53	86.33	2.25	69.24	1494
12						72	1.52	88.78	2.31	69.83	1492
14						74	1.53	85.27	2.22	68.98	1491
16						76	1.57	77.96	2.03	67.03	1493
18	1.54	84.45	2.20	68.77		78	1.55	82.69	2.16	68.31	1493
20	1.58	74.50	1.94	66.02		80	1.54	83.50	2.18	68.52	1492
22	1.62	67.28	1.75	63.69		82	1.57	77.38	2.02	66.86	1494
24	1.71	54.08	1.41	58.51		84	1.56	78.82	2.06	67.27	1494
26	1.66	60.96	1.59	61.38		86	1.56	78.60	2.05	67.21	1493
28	1.69	56.45	1.47	59.54		88	1.57	77.57	2.02	66.92	1495
30	1.69	56.35	1.47	59.50		90	1.54	85.16	2.22	68.95	1494
32	1.69	56.76	1.48	59.68		92	1.57	77.83	2.03	66.99	1493
34	1.64	63.51	1.66	62.35	1511	94	1.57	76.43	1.99	66.59	1497
36	1.65	63.28	1.65	62.26	1509	96	1.53	86.17	2.25	69.20	
38	1.66	61.17	1.59	61.46	1507	98	1.60	71.38	1.86	65.05	1518
40	1.64	64.51	1.68	62.72	1508	100	1.58	74.80	1.95	66.10	1527
42	1.65	62.52	1.63	61.98	1505	102					
44	1.64	64.41	1.68	62.68	1506	104					
46	1.61	69.87	1.82	64.56	1500	106					
48	1.56	78.61	2.05	67.21	1499	108	1.59	73.61	1.92	65.74	
50	1.57	77.88	2.03	67.00	1498	110	1.58	74.84	1.95	66.12	1504
52	1.59	72.61	1.89	65.44	1497	112	1.56	78.64	2.05	67.22	1495
54	1.58	75.17	1.96	66.22	1499	114	1.56	80.45	2.10	67.72	1494
56	1.56	78.83	2.06	67.27	1494	116	1.56	79.16	2.06	67.36	1492
58	1.55	82.26	2.14	68.20	1496	118	1.56	78.46	2.05	67.17	1494
						120	1.56	80.28	2.09	67.67	1493

## Hm 68

## Hm 68

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.55	82.71	2.16	68.32	1490	184	1.59	72.90	1.90	65.53	1493
124	1.55	82.24	2.14	68.20	1489	186	1.60	70.96	1.85	64.91	1494
126	1.55	80.96	2.11	67.86	1493	188	1.57	76.67	2.00	66.66	1491
128	1.57	78.01	2.03	67.04	1491	190	1.57	78.11	2.04	67.07	1491
130	1.56	79.93	2.08	67.58	1495	192	1.59	72.38	1.89	65.37	1492
132	1.55	80.93	2.11	67.85	1495	194	1.62	68.11	1.78	63.98	1496
134	1.57	78.21	2.04	67.10	1498	196	1.59	74.11	1.93	65.90	
136	1.58	75.23	1.96	66.23	1497	198	1.65	62.87	1.64	62.11	
138	1.62	68.30	1.78	64.04	1499	200	1.69	56.47	1.47	59.55	
140	1.58	74.49	1.94	66.01	1500	202					
142	1.65	62.83	1.64	62.10	1509	204					
144	1.64	64.08	1.67	62.56	1507	206					
146	1.61	69.57	1.81	64.46	1502	208	1.64	64.10	1.67	62.56	
148	1.60	72.05	1.88	65.26	1499	210	1.68	57.62	1.50	60.04	
150	1.59	73.10	1.91	65.59	1496	212	1.66	61.24	1.60	61.49	
152	1.58	75.72	1.97	66.38	1495	214	1.65	62.62	1.63	62.02	
154	1.60	71.04	1.85	64.94	1498	216	1.66	60.81	1.59	61.32	
156	1.62	68.35	1.78	64.06	1500	218	1.65	61.94	1.61	61.76	
158	1.62	68.17	1.78	63.99	1500	220	1.66	61.28	1.60	61.51	
160	1.61	69.33	1.81	64.38	1501	222	1.71	54.16	1.41	58.54	
162	1.62	67.29	1.75	63.70	1503	224	1.76	47.82	1.25	55.49	
164	1.64	63.85	1.66	62.48	1503	226	1.71	53.35	1.39	58.18	
166	1.67	58.85	1.53	60.55	1509	228	1.72	52.52	1.37	57.79	
168	1.66	60.97	1.59	61.38	1506	230	1.70	55.39	1.44	59.09	
170	1.66	60.69	1.58	61.28	1512	232	1.71	54.26	1.41	58.59	
172	1.60	70.72	1.84	64.84	1501	234	1.72	52.36	1.37	57.72	
174	1.61	68.91	1.80	64.25	1502	236	1.70	54.58	1.42	58.73	
176	1.60	71.48	1.86	65.08	1496	238	1.71	54.31	1.42	58.61	1502
178	1.61	69.69	1.82	64.50	1500	240	1.75	48.59	1.27	55.89	
180	1.61	69.59	1.81	64.47	1498	242	1.68	57.58	1.50	60.02	1495
182	1.57	78.12	2.04	67.07	1492	244	1.66	60.20	1.57	61.09	1496

# Hm 68

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.66	60.48	1.58	61.20	1495
248	1.65	62.02	1.62	61.79	1493
250	1.67	58.98	1.54	60.60	1496
252	1.67	58.67	1.53	60.47	1498
254	1.72	52.48	1.37	57.78	1507
256	1.71	53.05	1.38	58.04	1507
258	1.70	54.58	1.42	58.73	1504
260	1.67	59.80	1.56	60.93	1500
262	1.67	59.63	1.55	60.86	1499
264	1.69	56.25	1.47	59.46	1500
266	1.68	58.47	1.52	60.39	1502
268	1.64	63.37	1.65	62.30	1497
270	1.64	64.57	1.68	62.74	1494
272	1.63	65.32	1.70	63.00	1497
274	1.72	52.53	1.37	57.80	
276	1.66	61.16	1.59	61.46	1498
278	1.67	59.32	1.55	60.73	1501
280	1.65	61.71	1.61	61.67	1502
282	1.66	60.76	1.58	61.30	1501
284	1.68	57.95	1.51	60.17	1504
286	1.68	58.20	1.52	60.28	1506

## Hm 69

## Hm 69

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.58	75.67	1.97	66.36	1496
2						62	1.56	80.14	2.09	67.63	1492
4						64	1.58	74.18	1.93	65.92	1495
6	1.60	71.96	1.88	65.23		66	1.54	84.83	2.21	68.87	1492
8	1.65	62.16	1.62	61.84	1519	68	1.52	89.01	2.32	69.89	1491
10	1.57	77.36	2.02	66.85	1508	70	1.56	80.21	2.09	67.65	1492
12	1.56	78.93	2.06	67.30	1504	72	1.54	82.82	2.16	68.35	1490
14	1.55	81.37	2.12	67.97	1503	74	1.54	84.71	2.21	68.83	1489
16	1.57	76.75	2.00	66.68	1506	76	1.53	87.58	2.28	69.54	1490
18	1.55	81.30	2.12	67.95	1501	78	1.57	77.34	2.02	66.85	1492
20	1.57	77.87	2.03	67.00	1504	80	1.54	84.96	2.22	68.90	1493
22	1.58	75.79	1.98	66.40	1502	82	1.53	86.86	2.26	69.37	1493
24	1.54	82.86	2.16	68.36	1497	84	1.59	72.99	1.90	65.55	1499
26	1.55	80.75	2.11	67.80	1499	86	1.60	71.00	1.85	64.93	1499
28	1.52	87.81	2.29	69.60	1497	88	1.62	67.62	1.76	63.81	1501
30	1.52	88.46	2.31	69.76	1497	90	1.65	61.71	1.61	61.67	1509
32	1.53	86.91	2.27	69.38	1497	92	1.65	62.45	1.63	61.95	1513
34	1.55	81.18	2.12	67.91	1497	94	1.61	70.07	1.83	64.63	
36	1.55	81.85	2.13	68.09	1498	96	1.63	65.31	1.70	63.00	1536
38	1.55	81.71	2.13	68.06	1496	98	1.65	62.21	1.62	61.86	1528
40	1.56	79.48	2.07	67.45	1495	100					
42	1.56	79.76	2.08	67.53	1496	102					
44	1.57	76.27	1.99	66.54	1498	104					
46	1.56	80.46	2.10	67.72	1496	106					
48	1.57	77.27	2.01	66.83	1497	108	1.64	64.51	1.68	62.71	
50	1.57	78.03	2.03	67.05	1498	110	1.67	59.79	1.56	60.92	
52	1.57	77.47	2.02	66.89	1498	112	1.71	53.23	1.39	58.12	
54	1.58	75.52	1.97	66.32	1496	114	1.74	50.31	1.31	56.74	1529
56	1.59	73.22	1.91	65.63	1497	116	1.71	53.90	1.41	58.43	1526
58	1.56	78.47	2.05	67.17	1496	118	1.69	56.66	1.48	59.63	1524
						120	1.67	58.96	1.54	60.59	1520

## Hm 69

## Hm 69

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.64	63.84	1.66	62.47	1504	184	1.66	61.14	1.59	61.45	1502
124	1.63	66.32	1.73	63.36	1501	186	1.68	57.78	1.51	60.11	1508
126	1.62	67.89	1.77	63.90	1497	188	1.70	54.86	1.43	58.85	1509
128	1.61	69.47	1.81	64.43	1494	190	1.69	55.87	1.46	59.30	1510
130	1.63	65.92	1.72	63.22	1494	192	1.70	54.86	1.43	58.86	1508
132	1.60	71.78	1.87	65.18	1490	194	1.70	55.44	1.45	59.11	1510
134	1.60	70.81	1.85	64.87	1492	196	1.61	68.67	1.79	64.16	1511
136	1.59	72.42	1.89	65.38	1493	198	1.66	61.45	1.60	61.57	1522
138	1.60	70.36	1.83	64.72	1495	200	1.62	67.76	1.77	63.86	
140	1.63	66.60	1.74	63.46	1497	202					
142	1.64	64.38	1.68	62.67	1496	204					
144	1.66	61.46	1.60	61.58	1497	206					
146	1.70	55.06	1.44	58.95	1509	208	1.62	66.82	1.74	63.53	
148	1.75	49.04	1.28	56.11	1514	210	1.63	66.60	1.74	63.46	
150	1.69	56.11	1.46	59.40	1513	212	1.61	69.43	1.81	64.42	
152	1.67	58.90	1.54	60.56	1508	214	1.65	62.53	1.63	61.98	
154	1.66	61.66	1.61	61.65	1502	216	1.65	62.36	1.63	61.92	
156	1.68	58.57	1.53	60.43	1507	218	1.65	62.77	1.64	62.07	
158	1.72	52.50	1.37	57.79	1516	220	1.64	64.02	1.67	62.54	
160	1.70	55.27	1.44	59.03	1512	222	1.66	61.62	1.61	61.64	
162	1.70	55.33	1.44	59.06	1507	224	1.65	61.89	1.61	61.74	
164	1.70	55.37	1.44	59.08	1507	226	1.65	62.63	1.63	62.02	
166	1.66	60.26	1.57	61.11	1500	228	1.73	51.50	1.34	57.32	
168	1.67	59.00	1.54	60.60	1501	230	1.69	55.99	1.46	59.35	
170	1.67	59.43	1.55	60.78	1504	232	1.73	50.53	1.32	56.85	
172	1.69	56.46	1.47	59.55	1505	234	1.72	52.21	1.36	57.65	
174	1.71	54.28	1.42	58.60	1506	236	1.71	53.70	1.40	58.34	
176	1.66	60.72	1.58	61.29	1499	238	1.72	52.90	1.38	57.97	1520
178	1.67	59.72	1.56	60.89	1499	240	1.74	50.35	1.31	56.76	1517
180	1.65	62.75	1.64	62.07	1498	242	1.73	51.52	1.34	57.32	1518
182	1.66	60.27	1.57	61.11	1498	244	1.75	49.02	1.28	56.10	1521

# Hm 69

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.72	52.06	1.36	57.58	1520
248	1.75	48.10	1.25	55.64	1513
250	1.69	56.73	1.48	59.67	1508
252	1.71	53.19	1.39	58.10	1509
254	1.72	52.83	1.38	57.94	1513
256	1.73	51.23	1.34	57.19	1515
258	1.74	50.43	1.31	56.80	1510
260	1.75	48.86	1.27	56.02	1510
262	1.74	50.04	1.30	56.61	1510
264	1.73	51.40	1.34	57.27	1510
266	1.73	50.78	1.32	56.97	1509
268	1.73	51.56	1.34	57.34	1504
270	1.72	52.98	1.38	58.01	1504
272	1.73	50.73	1.32	56.95	1511
274	1.70	55.50	1.45	59.14	1501
276	1.69	56.06	1.46	59.38	1502
278	1.70	55.09	1.44	58.96	1504
280	1.68	57.77	1.51	60.10	1503
282	1.67	58.79	1.53	60.52	1500
284	1.71	53.86	1.40	58.41	1504
286	1.71	53.97	1.41	58.46	1509
288	1.72	52.25	1.36	57.67	1509
290	1.72	52.42	1.37	57.75	1508
292	1.72	51.79	1.35	57.45	1511
294	1.67	59.25	1.54	60.70	
296	1.58	75.43	1.97	66.29	
298	1.65	61.87	1.61	61.73	



## HM 72

## HM 72

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.69	56.93	1.48	59.75	1521
2						62	1.69	56.76	1.48	59.68	1514
4						64	1.74	50.30	1.31	56.74	1519
6						66	1.70	55.21	1.44	59.01	1473
8						68	1.70	54.52	1.42	58.70	1482
10						70	1.67	58.93	1.54	60.58	1488
12	1.70	54.92	1.43	58.88	1486	72	1.61	69.64	1.82	64.49	1486
14	1.58	74.77	1.95	66.10	1498	74	1.53	85.37	2.23	69.00	1478
16	1.70	54.69	1.43	58.78	1516	76	1.70	55.02	1.43	58.92	1485
18	1.69	56.67	1.48	59.64	1478	78	1.60	70.80	1.85	64.86	1447
20	1.72	52.03	1.36	57.56	1480	80	1.65	63.17	1.65	62.22	1444
22	1.71	53.18	1.39	58.10	1491	82	1.59	73.88	1.93	65.83	1455
24	1.69	55.81	1.46	59.27	1477	84	1.66	60.76	1.58	61.30	
26	1.75	48.10	1.25	55.64	1532	86	1.70	55.13	1.44	58.97	
28	1.74	49.42	1.29	56.31	1529	88	1.61	69.35	1.81	64.39	
30	1.73	51.15	1.33	57.15	1522	90	1.60	70.82	1.85	64.87	
32	1.72	51.99	1.36	57.55		92	1.63	66.37	1.73	63.38	
34	1.75	48.86	1.27	56.03	1479	94	1.58	75.33	1.96	66.26	
36	1.80	42.51	1.11	52.57	1537	96	1.57	76.65	2.00	66.65	
38						98	1.65	62.05	1.62	61.80	
40						100	1.59	72.65	1.89	65.45	
42						102	1.68	57.51	1.50	59.99	
44						104	1.63	65.03	1.70	62.90	
46						106	1.60	70.95	1.85	64.91	
48						108	1.67	59.98	1.56	61.00	1441
50					1499	110	1.85	37.76	0.98	49.61	
52	1.69	57.04	1.49	59.79	1503						
54	1.69	57.10	1.49	59.82	1509						
56	1.66	61.59	1.61	61.62	1518						
58	1.72	51.84	1.35	57.48	1516						

## HM 73

## HM 73

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.86	36.80	0.96	48.97	
2						62	1.93	31.65	0.83	45.21	1614
4						64	1.90	33.38	0.87	46.53	1621
6											
8											
10											
12	1.65	62.84	1.64	62.10							
14	1.75	48.20	1.26	55.69	1573						
16	1.77	46.27	1.21	54.68	1590						
18	1.69	56.90	1.48	59.73	1500						
20	1.70	55.09	1.44	58.96	1502						
22	1.69	57.02	1.49	59.79	1501						
24	1.72	52.75	1.38	57.90	1502						
26	1.78	44.65	1.16	53.80	1572						
28	1.76	47.08	1.23	55.11	1577						
30	1.88	35.04	0.91	47.74	1525						
32	1.81	41.68	1.09	52.08	1522						
34	1.76	46.87	1.22	55.00	1514						
36	1.76	47.67	1.24	55.42	1513						
38	1.78	45.14	1.18	54.07	1525						
40	1.74	49.48	1.29	56.34	1522						
42	1.80	42.92	1.12	52.81	1534						
44	1.85	37.84	0.99	49.67	1542						
46	1.87	36.10	0.94	48.49	1556						
48	1.89	34.29	0.89	47.21	1557						
50	1.92	32.28	0.84	45.70	1567						
52	1.94	30.71	0.80	44.47	1571						
54	1.93	31.55	0.82	45.13	1569						
56	1.96	29.40	0.77	43.40	1572						
58	1.98	27.44	0.72	41.71	1579						

## HM 74

## HM 74

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.86	36.94	0.96	49.06	1550
2						62	1.84	39.43	1.03	50.69	1554
4						64	1.87	36.64	0.96	48.86	1561
6	1.52	88.55	2.31	69.78		66	1.88	35.45	0.92	48.03	1564
8	1.76	46.89	1.22	55.01	1520	68	1.87	36.01	0.94	48.43	1552
10	1.74	49.45	1.29	56.32	1518	70	1.82	40.98	1.07	51.66	
12	1.75	48.57	1.27	55.88	1515	72	1.89	34.16	0.89	47.11	1550
14	1.78	45.55	1.19	54.29	1519	74	1.86	37.23	0.97	49.26	
16	1.77	46.33	1.21	54.71	1516	76					1515
18	1.74	50.25	1.31	56.71	1501	78					
20	1.66	60.40	1.57	61.16	1499	80	1.74	49.40	1.29	56.29	
22	1.62	67.97	1.77	63.93	1491	82	1.83	40.22	1.05	51.19	
24	1.63	66.17	1.73	63.31	1488	84	1.90	34.05	0.89	47.03	
26	1.67	59.50	1.55	60.81	1498	86	1.93	31.53	0.82	45.12	1475
28	1.80	43.28	1.13	53.02	1519	88	1.94	30.49	0.80	44.29	1536
30	1.76	47.30	1.23	55.22	1539	90	1.94	30.62	0.80	44.39	1550
32	1.89	34.16	0.89	47.11	1568	92	1.90	33.61	0.88	46.70	1618
34	1.84	38.66	1.01	50.20	1552	94	1.92	32.44	0.85	45.82	1581
36	1.90	33.47	0.87	46.60	1564	96	2.04	24.05	0.63	38.54	1566
38	1.93	30.94	0.81	44.65	1578	98	1.87	36.24	0.94	48.58	
40	1.64	63.94	1.67	62.51	1496	100	1.86	36.95	0.96	49.07	1536
42	1.60	70.95	1.85	64.91	1486	102	1.86	36.91	0.96	49.04	1545
44	1.68	57.59	1.50	60.03	1502	104	1.82	40.71	1.06	51.49	1530
46	1.74	49.86	1.30	56.52	1517	106	1.85	37.91	0.99	49.71	1535
48	1.73	51.59	1.35	57.36	1517	108	1.86	37.27	0.97	49.28	1539
50	1.76	47.39	1.24	55.27	1532	110	1.85	38.23	1.00	49.92	1537
52	1.78	44.99	1.17	53.98	1537	112	1.82	40.91	1.07	51.61	1538
54	1.71	53.97	1.41	58.46	1516	114	1.83	40.26	1.05	51.22	1535
56	1.83	39.69	1.03	50.86	1544	116	1.83	39.55	1.03	50.77	1535
58	1.86	37.33	0.97	49.32	1549	118	1.94	30.73	0.80	44.48	1561
						120	1.95	29.73	0.78	43.67	1571

## HM 74

## HM 74

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.90	34.05	0.89	47.03	1557	184	1.76	47.51	1.24	55.33	
124	1.85	37.82	0.99	49.65	1537	186	1.80	43.24	1.13	52.99	1487
126	1.91	32.76	0.85	46.06	1574	188	1.85	38.38	1.00	50.02	1525
128	2.00	26.60	0.69	40.95	1596	190	1.79	43.85	1.14	53.35	1516
130	1.88	35.33	0.92	47.95	1587	192	1.77	46.75	1.22	54.93	1507
132	1.61	69.14	1.80	64.32	1480	194	1.75	48.46	1.26	55.82	1498
134	1.79	44.00	1.15	53.43	1506	196	1.75	48.61	1.27	55.90	1494
136	1.90	33.55	0.87	46.66	1555	198	1.72	52.58	1.37	57.82	1493
138	1.76	47.44	1.24	55.30	1507	200	1.73	50.69	1.32	56.93	1494
140	1.73	50.88	1.33	57.02	1503	202	1.75	48.43	1.26	55.81	1497
142	1.68	57.76	1.51	60.09	1490	204	1.74	50.08	1.31	56.63	1497
144	1.72	52.25	1.36	57.67	1497	206	1.70	54.50	1.42	58.69	1494
146	1.69	56.69	1.48	59.65	1496	208	1.72	52.50	1.37	57.79	1496
148	1.72	52.68	1.37	57.87	1498	210	1.73	51.35	1.34	57.25	1498
150	1.73	51.16	1.33	57.15	1509	212	1.75	49.10	1.28	56.14	1497
152	1.71	53.27	1.39	58.14	1499	214	1.74	50.04	1.30	56.61	1497
154	1.69	56.31	1.47	59.48	1493	216	1.73	50.66	1.32	56.91	1495
156	1.70	54.56	1.42	58.72	1494	218	1.74	49.49	1.29	56.34	1498
158	1.68	57.28	1.49	59.90	1493	220	1.74	49.62	1.29	56.40	1497
160	1.68	57.67	1.50	60.06	1496	222	1.73	51.53	1.34	57.33	1501
162	1.71	53.52	1.40	58.26	1504	224	1.74	49.78	1.30	56.48	1503
164	1.78	45.52	1.19	54.27	1530	226	1.75	48.69	1.27	55.94	1504
166	1.77	46.45	1.21	54.77	1519	228	1.75	48.02	1.25	55.60	1513
168	1.76	47.02	1.23	55.08	1513	230	1.67	60.09	1.57	61.04	1505
170	1.75	48.55	1.27	55.87	1516	232	1.76	47.66	1.24	55.41	
172	1.71	54.27	1.42	58.59		234	1.83	39.92	1.04	51.00	1517
174	1.71	53.11	1.38	58.07	1546	236					1497
176	1.78	44.80	1.17	53.88	1553						
178											
180	1.72	52.26	1.36	57.67							
182	1.70	55.69	1.45	59.22							

## HM 75

## HM 75

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.68	57.28	1.49	59.89	1499
2						62	1.64	64.59	1.68	62.75	1499
4						64	1.66	61.04	1.59	61.41	1501
6						66	1.71	53.63	1.40	58.31	1503
8						68	1.70	55.42	1.45	59.10	1503
10						70	1.65	62.50	1.63	61.97	1501
12						72	1.61	69.94	1.82	64.59	1502
14						74	1.60	70.67	1.84	64.82	1502
16					1538	76	1.56	78.54	2.05	67.19	1494
18	1.69	56.25	1.47	59.46	1546	78	1.57	76.42	1.99	66.59	1488
20	1.78	44.94	1.17	53.96	1529	80	1.59	72.79	1.90	65.49	1489
22	1.80	43.07	1.12	52.90	1524	82	1.62	67.54	1.76	63.78	1492
24	1.80	42.61	1.11	52.63	1518	84	1.67	59.16	1.54	60.67	1491
26	1.81	41.75	1.09	52.12	1520	86	1.77	46.27	1.21	54.68	1491
28	1.75	48.84	1.27	56.02	1511	88	1.74	50.10	1.31	56.64	1492
30	1.77	45.99	1.20	54.53	1502	90	1.73	51.04	1.33	57.10	1490
32	1.78	45.08	1.18	54.03	1495	92	1.73	51.07	1.33	57.11	1492
34	1.75	48.87	1.27	56.03	1500	94	1.74	49.23	1.28	56.21	1491
36	1.78	45.22	1.18	54.11	1518	96	1.73	51.30	1.34	57.22	1510
38	1.71	53.20	1.39	58.11	1511	98					1518
40	1.71	53.26	1.39	58.14	1504	100					1524
42	1.72	52.50	1.37	57.78	1498	102					
44	1.73	51.43	1.34	57.29	1498	104					
46	1.71	54.16	1.41	58.54	1493	106					
48	1.72	52.95	1.38	58.00	1492	108	1.61	68.72	1.79	64.18	
50	1.72	51.76	1.35	57.44	1494	110	1.61	70.08	1.83	64.63	
52	1.74	50.36	1.31	56.77	1496	112	1.67	59.91	1.56	60.97	1513
54	1.77	46.61	1.22	54.86	1492	114	1.64	64.84	1.69	62.83	1505
56	1.72	52.08	1.36	57.59	1494	116	1.67	59.55	1.55	60.83	1502
58	1.74	49.54	1.29	56.36	1499	118	1.71	53.67	1.40	58.32	1509
						120	1.76	47.25	1.23	55.20	1526

## HM 75

## HM 75

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.84	39.45	1.03	50.71	1540	184	1.81	42.46	1.11	52.54	1526
124	1.77	45.83	1.19	54.44	1534	186	1.83	40.41	1.05	51.31	1526
126	1.78	44.93	1.17	53.95	1538	188	1.84	39.13	1.02	50.50	1532
128	1.79	43.73	1.14	53.27	1539	190	1.90	33.82	0.88	46.86	1548
130	1.79	44.43	1.16	53.67	1537	192	1.84	38.89	1.01	50.35	1535
132	1.75	48.96	1.28	56.08	1526	194	1.79	44.52	1.16	53.72	1516
134	1.73	50.68	1.32	56.93	1521	196	1.66	61.09	1.59	61.43	
136	1.78	45.07	1.18	54.03	1534	198	1.72	52.00	1.36	57.55	1496
138	1.74	49.72	1.30	56.45	1530	200	1.79	44.15	1.15	53.52	
140	1.69	56.40	1.47	59.53	1510	202					
142	1.65	61.77	1.61	61.69	1504	204					
144	1.66	60.76	1.58	61.30	1506	206					
146	1.73	50.85	1.33	57.00	1516	208	1.75	48.98	1.28	56.09	1446
148	1.79	44.19	1.15	53.54	1531	210	1.70	54.87	1.43	58.86	
150	1.80	43.20	1.13	52.97	1536	212	1.72	51.85	1.35	57.48	
152	1.78	45.35	1.18	54.18	1533	214	1.71	53.61	1.40	58.30	1453
154	1.75	48.42	1.26	55.80	1520	216	1.77	46.14	1.20	54.61	
156	1.76	47.03	1.23	55.08	1515	218	1.77	46.73	1.22	54.93	1453
158	1.72	52.56	1.37	57.81	1507	220					1525
160	1.73	50.66	1.32	56.91	1508	222	1.78	45.35	1.18	54.18	1523
162	1.76	48.00	1.25	55.58	1514	224	1.79	43.87	1.14	53.35	1528
164	1.69	56.45	1.47	59.54	1503	226	1.78	45.45	1.19	54.24	1526
166	1.71	53.13	1.39	58.08	1510	228	1.81	41.52	1.08	51.99	1536
168	1.74	49.88	1.30	56.53	1512	230	1.85	38.17	1.00	49.88	1540
170	1.73	51.45	1.34	57.29	1511	232					
172	1.72	52.25	1.36	57.67	1507	234	1.86	37.22	0.97	49.25	1548
174	1.74	49.98	1.30	56.58	1508	236	1.88	35.67	0.93	48.19	1552
176	1.74	49.61	1.29	56.40	1512	238	1.86	37.59	0.98	49.50	1554
178	1.76	47.02	1.23	55.08	1514	240	1.88	35.15	0.92	47.82	1555
180	1.78	44.92	1.17	53.94	1519	242	1.90	34.03	0.89	47.01	1560
182	1.80	43.29	1.13	53.02	1520	244	1.90	33.67	0.88	46.75	1561

# HM 75

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.91	32.91	0.86	46.18	1560
248	1.93	31.57	0.82	45.15	1561
250	1.87	36.49	0.95	48.76	1557
252	1.89	34.74	0.91	47.53	1562
254	1.89	34.77	0.91	47.55	1568
256	1.93	31.48	0.82	45.08	1557
258	1.90	33.52	0.87	46.64	1559
260	1.91	33.03	0.86	46.27	1558
262	1.92	31.94	0.83	45.44	1562
264	1.89	34.14	0.89	47.10	1557
266	1.85	38.47	1.00	50.08	1548
268	1.88	35.52	0.93	48.08	1550
270	1.89	34.13	0.89	47.09	1548
272	1.82	40.53	1.06	51.38	

## Hm 77

## Hm 77

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.66	60.54	1.58	61.22	1499
2						62	1.65	62.06	1.62	61.80	1499
4						64	1.67	59.29	1.55	60.72	1501
6						66	1.70	55.16	1.44	58.99	1503
8						68	1.70	55.08	1.44	58.95	1503
10						70	1.70	55.51	1.45	59.14	1501
12						72	1.69	56.05	1.46	59.37	1502
14						74	1.69	56.32	1.47	59.49	1502
16						76	1.63	65.14	1.70	62.94	1494
18	1.73	50.96	1.33	57.06	1538	78	1.61	68.65	1.79	64.16	1488
20	1.70	54.62	1.42	58.75	1546	80	1.60	71.10	1.85	64.96	1489
22	1.72	51.82	1.35	57.47	1529	82	1.62	66.96	1.75	63.58	1492
24	1.71	54.05	1.41	58.49	1524	84	1.64	64.31	1.68	62.64	1491
26	1.69	55.98	1.46	59.34	1518	86	1.63	65.80	1.72	63.18	1491
28	1.68	57.41	1.50	59.95	1520	88	1.64	64.30	1.68	62.64	1492
30	1.64	64.45	1.68	62.69	1511	90	1.62	67.13	1.75	63.64	1490
32	1.59	72.94	1.90	65.54	1502	92	1.64	64.52	1.68	62.72	1492
34	1.73	51.12	1.33	57.13	1495	94	1.65	62.26	1.62	61.88	1491
36	1.70	54.62	1.42	58.75	1500	96	1.60	72.04	1.88	65.26	1510
38	1.66	61.41	1.60	61.56	1518	98	1.67	58.92	1.54	60.57	1518
40	1.67	59.91	1.56	60.97	1511	100					1524
42	1.65	61.76	1.61	61.69	1504	102					
44	1.64	63.40	1.65	62.31	1498	104					
46	1.71	53.46	1.39	58.23	1498	106					
48	1.62	67.16	1.75	63.65	1493	108	1.64	63.43	1.65	62.32	
50	1.62	67.01	1.75	63.60	1492	110	1.64	64.24	1.67	62.62	
52	1.62	67.86	1.77	63.89	1494	112	1.63	65.22	1.70	62.97	1494
54	1.61	68.78	1.79	64.20	1496	114	1.65	61.84	1.61	61.72	1499
56	1.60	70.76	1.85	64.85	1492	116	1.66	60.29	1.57	61.12	1496
58	1.65	62.64	1.63	62.03	1494	118	1.64	64.53	1.68	62.72	1492
					1499	120	1.63	65.21	1.70	62.97	1493



## Hm 77

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.63	66.26	1.73	63.34	1489	184	1.89	34.87	0.91	47.63	1557
124	1.64	63.46	1.65	62.33	1493	186	1.86	37.04	0.97	49.13	1557
126	1.64	63.76	1.66	62.44	1493	188	1.87	36.53	0.95	48.78	1558
128	1.63	65.36	1.70	63.02	1494	190	1.88	35.06	0.91	47.76	1554
130	1.67	59.79	1.56	60.92	1498	192	1.89	34.40	0.90	47.29	1558
132	1.67	60.01	1.56	61.01	1499	194	1.89	34.66	0.90	47.47	1558
134	1.64	64.18	1.67	62.60	1493	196	1.81	42.01	1.10	52.27	
136	1.60	71.74	1.87	65.16	1487	198	1.85	38.34	1.00	49.99	1594
138	1.64	64.72	1.69	62.79	1495	200	1.89	34.30	0.89	47.21	1604
140	1.73	51.11	1.33	57.13	1519	202	1.73	51.31	1.34	57.23	
142	1.77	46.55	1.21	54.83	1535	204	1.82	41.00	1.07	51.67	
144	1.81	41.48	1.08	51.96	1554	206	1.79	43.53	1.14	53.16	
146					1559	208	1.88	35.68	0.93	48.19	1566
148					1582	210	1.90	33.47	0.87	46.60	1561
150					1496	212	1.89	34.58	0.90	47.41	1558
152					1500	214	1.89	34.68	0.90	47.48	1553
154	1.76	47.76	1.25	55.46	1520	216	1.90	33.63	0.88	46.72	1554
156	1.74	50.07	1.31	56.62	1525	218	1.89	34.25	0.89	47.17	1557
158	1.74	49.38	1.29	56.29	1529	220	1.90	33.99	0.89	46.99	1556
160	1.77	46.43	1.21	54.77	1531	222	1.88	35.83	0.93	48.30	1558
162	1.84	39.13	1.02	50.50		224	1.91	32.60	0.85	45.95	1556
164	1.87	35.95	0.94	48.38	1554	226	1.89	34.30	0.89	47.21	1557
166	1.88	35.59	0.93	48.13	1557	228	1.90	33.73	0.88	46.79	1556
168	1.85	37.65	0.98	49.53	1552	230	1.89	34.34	0.90	47.24	1556
170	1.88	35.04	0.91	47.75	1553	232	1.95	29.55	0.77	43.52	
172	1.86	36.79	0.96	48.96	1556	234	1.89	34.69	0.90	47.49	1558
174	1.90	33.36	0.87	46.52	1554	236	1.90	33.63	0.88	46.72	1562
176	1.89	34.59	0.90	47.42	1555	238	1.97	28.09	0.73	42.28	
178	1.86	37.56	0.98	49.48	1553	240	1.91	32.56	0.85	45.92	1558
180	1.88	35.37	0.92	47.98	1548	242	1.90	33.35	0.87	46.52	1561
182	1.89	34.63	0.90	47.45	1558	244	1.91	33.18	0.87	46.39	1563

## Hm 77

# Hm 77

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.89	34.34	0.90	47.24	1562
248	1.91	33.14	0.86	46.36	1559
250	1.89	34.17	0.89	47.12	1559
252	1.88	35.20	0.92	47.86	1563
254	1.92	32.07	0.84	45.54	1562
256	1.89	34.74	0.91	47.53	1563
258	1.89	34.64	0.90	47.46	1564
260	1.90	33.85	0.88	46.88	1569
262	1.85	37.74	0.98	49.60	
264	1.81	41.85	1.09	52.18	
266	1.85	38.33	1.00	49.99	
268	1.94	30.51	0.80	44.31	

## Hm 78

## Hm 78

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.59	73.07	1.91	65.58	1508
2						62	1.61	69.12	1.80	64.31	1506
4						64	1.61	69.26	1.81	64.36	1502
6						66	1.59	74.01	1.93	65.87	1503
8						68	1.59	72.39	1.89	65.37	1505
10						70	1.62	67.73	1.77	63.85	1506
12	1.57	77.30	2.02	66.84		72	1.61	68.90	1.80	64.24	1513
14	1.63	65.44	1.71	63.05	1525	74	1.61	68.61	1.79	64.14	1507
16	1.62	66.93	1.75	63.57	1520	76	1.62	67.76	1.77	63.86	1506
18	1.62	66.83	1.74	63.54	1521	78	1.58	75.81	1.98	66.41	1504
20	1.65	62.42	1.63	61.94	1520	80	1.65	62.83	1.64	62.09	1511
22	1.66	60.60	1.58	61.24	1521	82	1.59	73.00	1.90	65.56	1501
24	1.68	57.23	1.49	59.88	1523	84	1.60	71.69	1.87	65.15	1499
26	1.69	56.34	1.47	59.50	1519	86	1.66	61.30	1.60	61.52	1507
28	1.70	55.24	1.44	59.02	1519	88	1.65	62.64	1.63	62.02	1508
30	1.68	58.42	1.52	60.37	1519	90	1.64	63.55	1.66	62.36	1506
32	1.67	59.57	1.55	60.83	1519	92	1.64	64.44	1.68	62.69	1506
34	1.65	62.28	1.62	61.89	1524	94	1.56	79.64	2.08	67.50	
36	1.68	57.59	1.50	60.02	1524	96	1.61	68.60	1.79	64.14	1488
38	1.68	57.38	1.50	59.94	1515	98					
40	1.65	63.00	1.64	62.16	1500	100					
42	1.58	74.83	1.95	66.12	1501	102					
44	1.62	67.71	1.77	63.84	1500	104					
46	1.65	61.73	1.61	61.68	1506	106	1.56	79.56	2.07	67.48	
48	1.62	68.04	1.77	63.95	1503	108	1.58	75.86	1.98	66.42	
50	1.65	62.50	1.63	61.97	1507	110	1.56	79.00	2.06	67.32	1500
52	1.64	63.70	1.66	62.42	1512	112	1.60	71.06	1.85	64.95	1506
54	1.57	76.98	2.01	66.75	1509	114	1.55	82.21	2.14	68.19	1498
56	1.60	71.79	1.87	65.18	1514	116	1.56	79.35	2.07	67.42	1499
58	1.58	74.69	1.95	66.07	1501	118	1.55	82.68	2.16	68.31	1499
						120	1.55	81.69	2.13	68.05	1496

## Hm 78

## Hm 78

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.57	78.33	2.04	67.13	1492	184	1.52	89.28	2.33	69.95	1484
124	1.58	75.52	1.97	66.32	1497	186	1.55	82.62	2.15	68.30	1485
126	1.58	75.07	1.96	66.19	1491	188	1.55	80.90	2.11	67.84	1487
128	1.59	72.97	1.90	65.55	1497	190	1.56	78.66	2.05	67.22	1488
130	1.61	69.20	1.80	64.34	1502	192	1.60	70.78	1.85	64.86	1493
132	1.60	70.89	1.85	64.89	1505	194	1.60	71.33	1.86	65.03	1493
134	1.59	72.69	1.90	65.46	1497	196	1.53	87.35	2.28	69.49	
136	1.57	76.94	2.01	66.74	1504	198	1.58	74.85	1.95	66.12	1480
138	1.57	77.88	2.03	67.00	1501	200	1.62	68.13	1.78	63.98	
140	1.56	78.76	2.05	67.25	1493	202					
142	1.58	75.03	1.96	66.17	1497	204	1.53	85.45	2.23	69.02	
144	1.56	78.80	2.05	67.26	1493	206	1.58	75.35	1.96	66.27	
146	1.60	70.46	1.84	64.75	1494	208	1.63	66.24	1.73	63.33	1502
148	1.56	80.02	2.09	67.60	1495	210	1.67	58.83	1.53	60.53	1509
150	1.59	73.08	1.91	65.58	1496	212	1.64	63.82	1.66	62.46	1503
152	1.57	76.66	2.00	66.65	1493	214	1.64	63.91	1.67	62.49	1501
154	1.59	73.72	1.92	65.78	1494	216	1.66	60.34	1.57	61.14	1508
156	1.57	77.26	2.01	66.83	1490	218	1.62	67.35	1.76	63.72	1496
158	1.59	73.63	1.92	65.75	1491	220	1.64	64.60	1.68	62.75	1497
160	1.56	79.10	2.06	67.35	1490	222	1.63	65.17	1.70	62.95	1496
162	1.57	78.15	2.04	67.08	1486	224	1.62	68.20	1.78	64.01	1493
164	1.57	78.09	2.04	67.06	1489	226	1.64	64.84	1.69	62.84	1496
166	1.57	77.28	2.01	66.83	1488	228	1.60	70.59	1.84	64.80	1480
168	1.56	79.22	2.07	67.38	1487	230	1.59	72.31	1.89	65.34	1484
170	1.55	82.28	2.15	68.21	1484	232	1.62	67.68	1.76	63.83	1490
172	1.55	82.10	2.14	68.16	1486	234	1.62	67.64	1.76	63.82	1493
174	1.52	88.15	2.30	69.68	1486	236	1.63	65.03	1.70	62.90	1494
176	1.53	85.28	2.22	68.98	1486	238	1.63	66.51	1.73	63.42	1493
178	1.55	81.77	2.13	68.07	1485	240	1.59	72.85	1.90	65.51	1486
180	1.53	86.50	2.26	69.28	1486	242	1.64	64.82	1.69	62.83	1489
182	1.55	82.64	2.15	68.30	1486	244	1.65	63.07	1.64	62.19	1488

# Hm 78

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.62	67.26	1.75	63.69	1486
248	1.62	68.30	1.78	64.04	1488
250	1.63	66.07	1.72	63.27	1492
252	1.64	63.75	1.66	62.44	1496
254	1.59	73.31	1.91	65.65	1486
256	1.58	75.59	1.97	66.34	1484
258	1.63	66.52	1.73	63.43	1493
260	1.65	62.87	1.64	62.11	1494
262	1.64	64.39	1.68	62.67	1489
264	1.63	65.59	1.71	63.10	1491
266	1.62	67.66	1.76	63.82	1487
268	1.61	69.99	1.83	64.60	1488
270	1.62	66.93	1.75	63.57	1488
272	1.63	65.03	1.70	62.90	1494
274	1.65	63.18	1.65	62.23	1496
276	1.66	60.24	1.57	61.10	1493
278	1.64	64.58	1.68	62.74	1491
280	1.64	64.34	1.68	62.65	1490
282	1.61	68.49	1.79	64.11	1488
284	1.63	66.10	1.72	63.28	1489
286	1.64	63.53	1.66	62.36	1491
288	1.64	63.95	1.67	62.51	1492
290	1.64	63.31	1.65	62.27	1491
292	1.63	65.39	1.70	63.03	1490
294	1.64	64.33	1.68	62.65	1490
296					
298	1.64	63.34	1.65	62.28	1470
300	1.70	55.57	1.45	59.17	

## HM 80

## HM 80

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.63	65.63	1.71	63.12	1504
2						62	1.60	70.61	1.84	64.80	1502
4						64	1.59	72.32	1.89	65.35	1498
6						66	1.57	77.32	2.02	66.84	1497
8						68	1.56	79.28	2.07	67.40	1496
10						70	1.58	75.73	1.97	66.38	1497
12						72	1.60	71.48	1.86	65.08	1502
14					1501	74	1.58	75.72	1.97	66.38	1497
16	1.79	68.64	1.79	64.15	1508	76	1.56	78.59	2.05	67.20	1493
18	1.69	65.00	1.69	62.89	1511	78	1.58	74.94	1.95	66.15	1497
20	1.63	65.72	1.71	63.15	1513	80	1.58	74.46	1.94	66.00	1497
22	1.64	64.39	1.68	62.67	1512	82	1.60	71.67	1.87	65.14	1494
24	1.67	58.69	1.53	60.48	1516	84	1.57	76.76	2.00	66.68	1495
26	1.68	57.75	1.51	60.09	1519	86	1.57	76.30	1.99	66.55	1494
28	1.71	53.14	1.39	58.08	1520	88	1.56	79.31	2.07	67.41	1494
30	1.68	57.82	1.51	60.12	1515	90	1.60	71.75	1.87	65.17	1496
32	1.68	57.72	1.50	60.08	1516	92	1.57	77.40	2.02	66.87	1496
34	1.66	60.93	1.59	61.37	1509	94	1.52	89.94	2.35	70.11	
36	1.64	63.38	1.65	62.30	1505	96	1.54	84.46	2.20	68.77	1518
38	1.63	65.14	1.70	62.94	1503	98					
40	1.63	65.80	1.72	63.18	1504	100					
42	1.65	62.96	1.64	62.14	1503	102					
44	1.61	69.30	1.81	64.38	1503	104					
46	1.61	70.09	1.83	64.63	1501	106					
48	1.62	67.94	1.77	63.92	1504	108					
50	1.61	68.65	1.79	64.16	1507	110	1.54	84.00	2.19	68.65	
52	1.62	68.04	1.77	63.95	1503	112	1.59	74.12	1.93	65.90	
54	1.61	69.66	1.82	64.49	1503	114	1.59	74.17	1.93	65.92	
56	1.56	80.52	2.10	67.74	1498	116	1.62	68.17	1.78	64.00	
58	1.57	76.66	2.00	66.65	1497	118	1.61	70.08	1.83	64.63	
	1.59	72.89	1.90	65.52	1502	120	1.57	76.88	2.00	66.72	

## HM 80

## HM 80

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.59	73.92	1.93	65.84	1481	184	1.62	68.02	1.77	63.94	1499
124	1.55	81.08	2.11	67.89	1481	186	1.62	66.79	1.74	63.53	1497
126	1.57	78.33	2.04	67.13	1487	188	1.63	66.68	1.74	63.49	1496
128	1.60	71.96	1.88	65.23	1499	190	1.64	64.77	1.69	62.81	1495
130	1.59	73.68	1.92	65.77	1494	192	1.64	63.46	1.65	62.33	1498
132	1.59	73.99	1.93	65.86	1496	194	1.60	71.09	1.85	64.96	1493
134	1.58	74.77	1.95	66.10	1494	196					
136	1.58	75.41	1.97	66.29	1492	198	1.62	67.21	1.75	63.67	1512
138	1.56	79.67	2.08	67.50	1490	200	1.62	67.72	1.77	63.84	1519
140	1.57	78.11	2.04	67.07	1488	202					
142	1.56	79.49	2.07	67.45	1491	204					
144	1.56	79.00	2.06	67.32	1491	206					
146	1.54	83.42	2.18	68.51	1488	208					
148	1.52	88.43	2.31	69.75	1487	210					
150	1.53	87.12	2.27	69.43	1487	212					
152	1.53	86.54	2.26	69.29	1487	214					
154	1.53	86.35	2.25	69.24	1487	216	1.58	75.23	1.96	66.23	
156	1.52	87.72	2.29	69.58	1487	218	1.56	78.64	2.05	67.22	
158	1.55	82.63	2.15	68.30	1487	220	1.54	84.67	2.21	68.83	
160	1.55	82.44	2.15	68.25	1489	222	1.57	77.49	2.02	66.89	
162	1.57	77.47	2.02	66.89	1489	224	1.55	81.38	2.12	67.97	
164	1.60	71.76	1.87	65.17	1491	226	1.61	70.01	1.83	64.61	
166	1.60	71.54	1.87	65.10	1492	228	1.56	79.40	2.07	67.43	
168	1.56	79.83	2.08	67.55	1489	230	1.60	71.31	1.86	65.03	
170	1.57	77.63	2.02	66.93	1489	232	1.61	70.29	1.83	64.70	
172	1.58	76.15	1.99	66.51	1489	234	1.61	68.48	1.79	64.10	
174	1.56	80.11	2.09	67.63	1488	236	1.66	61.56	1.61	61.61	
176	1.60	71.32	1.86	65.03	1492	238	1.62	67.41	1.76	63.74	
178	1.60	71.04	1.85	64.94	1497	240	1.64	64.85	1.69	62.84	1508
180	1.65	62.37	1.63	61.92	1499	242	1.60	70.87	1.85	64.89	
182	1.63	65.36	1.70	63.02	1497	244					

# HM 80

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.56	78.97	2.06	67.31	1493
248	1.62	67.08	1.75	63.63	1495
250	1.62	67.25	1.75	63.68	1500
252	1.61	69.99	1.82	64.60	1498
254	1.64	64.38	1.68	62.67	1491
256	1.63	65.18	1.70	62.96	1489
258	1.62	66.94	1.75	63.57	1487
260	1.62	67.48	1.76	63.76	1486
262	1.60	71.83	1.87	65.19	1488
264	1.62	67.52	1.76	63.78	1488
266	1.61	68.65	1.79	64.16	1488
268	1.63	66.67	1.74	63.48	1488
270	1.60	70.98	1.85	64.92	1486
272	1.61	70.16	1.83	64.66	1487
274	1.60	70.43	1.84	64.74	1487
276	1.63	65.79	1.72	63.17	1488
278	1.59	72.32	1.89	65.35	1490
280	1.62	67.49	1.76	63.76	1490
282	1.60	71.88	1.87	65.21	1484
284	1.54	82.95	2.16	68.38	1487
286	1.60	71.44	1.86	65.07	1487
288	1.60	70.32	1.83	64.71	1488
290	1.57	76.87	2.00	66.71	1487
292	1.60	71.06	1.85	64.95	1487
294	1.59	73.31	1.91	65.65	1484
296	1.59	73.04	1.90	65.57	
298	1.53	85.61	2.23	69.06	



## HM 81

## HM 81

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.60	71.08	1.85	64.95	1483
2						62	1.61	69.70	1.82	64.51	1487
4						64	1.64	64.45	1.68	62.69	1490
6						66	1.62	66.91	1.74	63.56	1489
8						68	1.60	70.70	1.84	64.83	1487
10						70	1.66	61.17	1.59	61.46	1488
12						72	1.62	67.77	1.77	63.86	1487
14						74	1.65	62.78	1.64	62.08	1490
16						76	1.65	62.88	1.64	62.11	1491
18	1.66	60.16	1.57	61.07		78	1.65	62.31	1.62	61.90	1491
20	1.68	57.24	1.49	59.88		80	1.64	64.31	1.68	62.64	1490
22	1.66	61.57	1.61	61.62		82	1.66	60.40	1.57	61.16	1498
24	1.66	60.70	1.58	61.28	1493	84	1.71	53.77	1.40	58.37	1515
26	1.62	67.27	1.75	63.69	1491	86	1.82	40.78	1.06	51.53	1551
28	1.64	64.03	1.67	62.54	1490	88	1.83	39.75	1.04	50.89	1561
30	1.60	71.56	1.87	65.11	1487	90	1.92	32.29	0.84	45.71	1580
32	1.59	72.22	1.88	65.31	1487	92	1.97	28.33	0.74	42.49	1589
34	1.61	70.10	1.83	64.64	1487	94					
36	1.60	70.46	1.84	64.75	1488	96	1.71	53.61	1.40	58.30	1572
38	1.60	70.91	1.85	64.90	1490	98	1.93	31.49	0.82	45.09	
40	1.65	62.81	1.64	62.09	1494	100					
42	1.66	60.75	1.58	61.30	1493	102	1.80	42.92	1.12	52.81	
44	1.59	73.14	1.91	65.60	1485	104	1.91	33.22	0.87	46.41	
46	1.57	76.79	2.00	66.69	1482	106	1.94	30.22	0.79	44.07	
48	1.58	75.95	1.98	66.45	1482	108	1.96	28.98	0.76	43.04	
50	1.59	73.57	1.92	65.73	1482	110	2.10	20.58	0.54	34.92	
52	1.58	74.54	1.94	66.03	1482	112	2.05	23.00	0.60	37.49	
54	1.60	70.79	1.85	64.86	1482	114	2.05	23.36	0.61	37.85	
56	1.63	65.29	1.70	63.00	1485	116	2.05	23.37	0.61	37.86	1466
58	1.62	67.78	1.77	63.86	1484	118					1526
						120	1.71	53.41	1.39	58.20	

## HM 81

## HM 81

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.85	37.74	0.98	49.60		184	1.69	55.76	1.45	59.25	1505
124	1.88	35.50	0.93	48.07		186	1.71	53.89	1.41	58.42	1501
126	1.77	46.13	1.20	54.60		188	1.70	54.85	1.43	58.85	1500
128	1.63	65.29	1.70	63.00		190	1.71	53.23	1.39	58.12	1505
130	1.67	59.22	1.54	60.69		192	1.69	56.22	1.47	59.45	1504
132	1.68	57.36	1.50	59.93		194	1.69	56.94	1.48	59.75	1503
134	1.71	54.23	1.41	58.57		196	1.62	66.71	1.74	63.50	
136	1.68	57.53	1.50	60.00	1492	198	1.68	57.48	1.50	59.98	1524
138	1.66	61.39	1.60	61.55	1494	200	1.69	55.81	1.46	59.27	1523
140	1.67	59.69	1.56	60.88	1491	202					
142	1.66	61.48	1.60	61.58	1490	204					
144	1.66	60.56	1.58	61.22	1489	206	1.65	62.18	1.62	61.85	
146	1.67	59.14	1.54	60.66	1491	208	1.67	59.12	1.54	60.65	
148	1.64	64.13	1.67	62.58	1491	210	1.69	57.14	1.49	59.84	
150	1.66	61.11	1.59	61.44	1493	212	1.68	57.79	1.51	60.11	
152	1.68	58.34	1.52	60.34	1496	214	1.72	52.55	1.37	57.81	
154	1.69	56.77	1.48	59.68	1502	216	1.70	54.94	1.43	58.89	
156	1.71	53.10	1.38	58.07	1504	218	1.72	52.71	1.37	57.88	
158	1.66	60.91	1.59	61.36	1494	220	1.74	49.42	1.29	56.30	1499
160	1.66	61.12	1.59	61.44	1489	222	1.75	48.95	1.28	56.07	1498
162	1.65	62.98	1.64	62.15	1490	224	1.72	52.01	1.36	57.56	1496
164	1.67	58.81	1.53	60.53	1491	226	1.70	55.21	1.44	59.01	1490
166	1.65	62.44	1.63	61.95	1490	228	1.69	56.35	1.47	59.50	1490
168	1.65	62.90	1.64	62.12	1489	230	1.71	53.51	1.40	58.25	1490
170	1.70	55.03	1.43	58.93	1497	232	1.71	53.04	1.38	58.04	1493
172	1.73	50.80	1.32	56.98	1504	234	1.71	53.96	1.41	58.45	1491
174	1.71	54.12	1.41	58.53	1505	236	1.70	55.37	1.44	59.08	1492
176	1.72	52.05	1.36	57.57	1506	238	1.73	51.44	1.34	57.29	1498
178	1.76	47.73	1.24	55.45	1513	240	1.75	49.02	1.28	56.10	1495
180	1.74	50.35	1.31	56.76	1517	242	1.75	48.57	1.27	55.88	1495
182	1.71	54.19	1.41	58.56	1509	244	1.73	51.56	1.34	57.35	1494

# HM 81

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
246	1.71	53.78	1.40	58.37	1493
248	1.71	53.67	1.40	58.33	1492
250	1.71	54.12	1.41	58.52	1491
252	1.68	58.08	1.51	60.23	1488
254	1.68	57.90	1.51	60.16	1489
256	1.70	55.72	1.45	59.23	1490
258	1.68	58.31	1.52	60.32	1490
260	1.70	54.49	1.42	58.69	1491
262	1.68	58.42	1.52	60.37	1491
264	1.68	57.54	1.50	60.00	1492
266	1.71	53.34	1.39	58.17	1492
268	1.69	56.22	1.47	59.45	1492
270	1.68	57.17	1.49	59.85	1490
272	1.71	53.05	1.38	58.04	1491
274	1.68	58.40	1.52	60.36	1493
276	1.68	58.20	1.52	60.28	1494
278	1.74	49.51	1.29	56.35	1504
280	1.78	44.83	1.17	53.89	1520
282	1.82	41.18	1.07	51.78	1527
284	1.81	42.46	1.11	52.54	1527
286	1.72	51.76	1.35	57.44	
288	1.83	40.06	1.04	51.09	1553
290	1.81	41.73	1.09	52.11	1565

## HM 86

## HM 86

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						60	1.96	29.05	0.76	43.10	1561
2						62	1.89	34.83	0.91	47.59	1564
4						64	1.93	31.31	0.82	44.94	1566
6	1.78	44.78	1.17	53.87		66	1.88	35.81	0.93	48.28	1568
8	1.80	42.96	1.12	52.83		68	1.94	30.81	0.80	44.55	1575
10	1.83	39.83	1.04	50.94		70	1.91	33.16	0.86	46.37	1566
12	1.77	46.35	1.21	54.72		72	1.89	34.54	0.90	47.39	1564
14	1.79	44.19	1.15	53.54	1547	74	1.91	32.80	0.86	46.10	1565
16	1.83	40.28	1.05	51.22	1558	76	1.89	34.75	0.91	47.54	1568
18	1.87	36.40	0.95	48.70	1562	78	1.88	35.23	0.92	47.88	1567
20	1.84	38.64	1.01	50.19	1561	80	1.86	37.51	0.98	49.44	1565
22	1.84	39.28	1.02	50.60	1557	82	1.86	36.85	0.96	49.00	1560
24	1.87	36.68	0.96	48.88	1560	84	1.86	36.84	0.96	48.99	1560
26	1.85	37.80	0.99	49.64	1557	86	1.91	33.13	0.86	46.35	1560
28	1.87	36.42	0.95	48.71	1562	88	1.91	32.64	0.85	45.98	1576
30	1.84	38.89	1.01	50.35	1550	90	1.91	33.02	0.86	46.26	1577
32	1.83	39.61	1.03	50.81	1550	92	1.94	30.34	0.79	44.16	1589
34	1.87	36.62	0.95	48.84	1563	94	1.84	39.21	1.02	50.55	
36	1.84	39.29	1.02	50.60	1552	96	1.87	36.20	0.94	48.55	1552
38	1.84	38.83	1.01	50.31	1554	98	1.95	29.90	0.78	43.81	
40	1.86	37.24	0.97	49.26	1556	100					
42	1.85	38.08	0.99	49.82	1553	102	1.91	32.96	0.86	46.22	
44	1.85	38.27	1.00	49.94	1555	104	1.85	38.24	1.00	49.93	
46	1.87	36.45	0.95	48.73	1557	106	1.86	37.10	0.97	49.17	
48	1.86	36.99	0.96	49.10	1551	108	1.92	32.12	0.84	45.58	
50	1.85	38.23	1.00	49.92	1551	110	1.92	32.14	0.84	45.59	1531
52	1.89	34.76	0.91	47.55	1560	112	1.95	29.97	0.78	43.87	
54	1.87	36.01	0.94	48.43	1565	114	1.90	33.85	0.88	46.88	1569
56	1.89	34.90	0.91	47.65	1567	116	1.96	29.24	0.76	43.26	1575
58	1.87	35.92	0.94	48.36	1558	118	1.94	30.25	0.79	44.10	1580
						120	1.93	31.09	0.81	44.77	

## HM 86

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
122	1.89	34.22	0.89	47.16	1597
124	1.92	32.39	0.84	45.78	1581
126	1.91	33.17	0.86	46.38	
128	1.89	34.70	0.90	47.50	1589
130	1.91	32.71	0.85	46.03	1593
132	1.92	32.21	0.84	45.64	1588
134	1.84	39.11	1.02	50.49	
136	1.88	35.78	0.93	48.26	1542
138	1.96	29.18	0.76	43.21	1570
140	1.87	36.47	0.95	48.74	1555
142	1.88	34.99	0.91	47.71	1558
144	1.89	34.56	0.90	47.40	1558
146	1.87	36.63	0.96	48.85	1552
148	1.94	30.34	0.79	44.17	1587
150	1.98	27.51	0.72	41.77	1586
152	1.96	29.15	0.76	43.18	1582
154	1.91	32.80	0.86	46.10	1572
156	1.93	31.66	0.83	45.22	1569
158	1.92	31.86	0.83	45.38	1576
160	1.92	31.77	0.83	45.31	1575
162	1.95	30.19	0.79	44.04	1580
164	1.95	29.95	0.78	43.85	1584
166	1.93	31.34	0.82	44.97	1581
168	1.93	31.08	0.81	44.76	1575
170	1.92	31.91	0.83	45.41	
172	1.96	29.39	0.77	43.38	1585
174	1.94	30.81	0.80	44.55	1575
176	1.92	32.25	0.84	45.68	1575
178	1.97	28.31	0.74	42.47	1574
180	1.94	30.91	0.81	44.63	
182	1.92	32.01	0.83	45.50	

## HM 86

Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
184	1.92	32.42	0.85	45.81	1585
186	1.92	32.23	0.84	45.66	1582
188	1.86	36.74	0.96	48.93	1564
190	1.84	39.31	1.02	50.61	
192	1.79	43.89	1.14	53.37	
194	1.74	49.67	1.29	56.43	

## Hm 87

## Hm 87

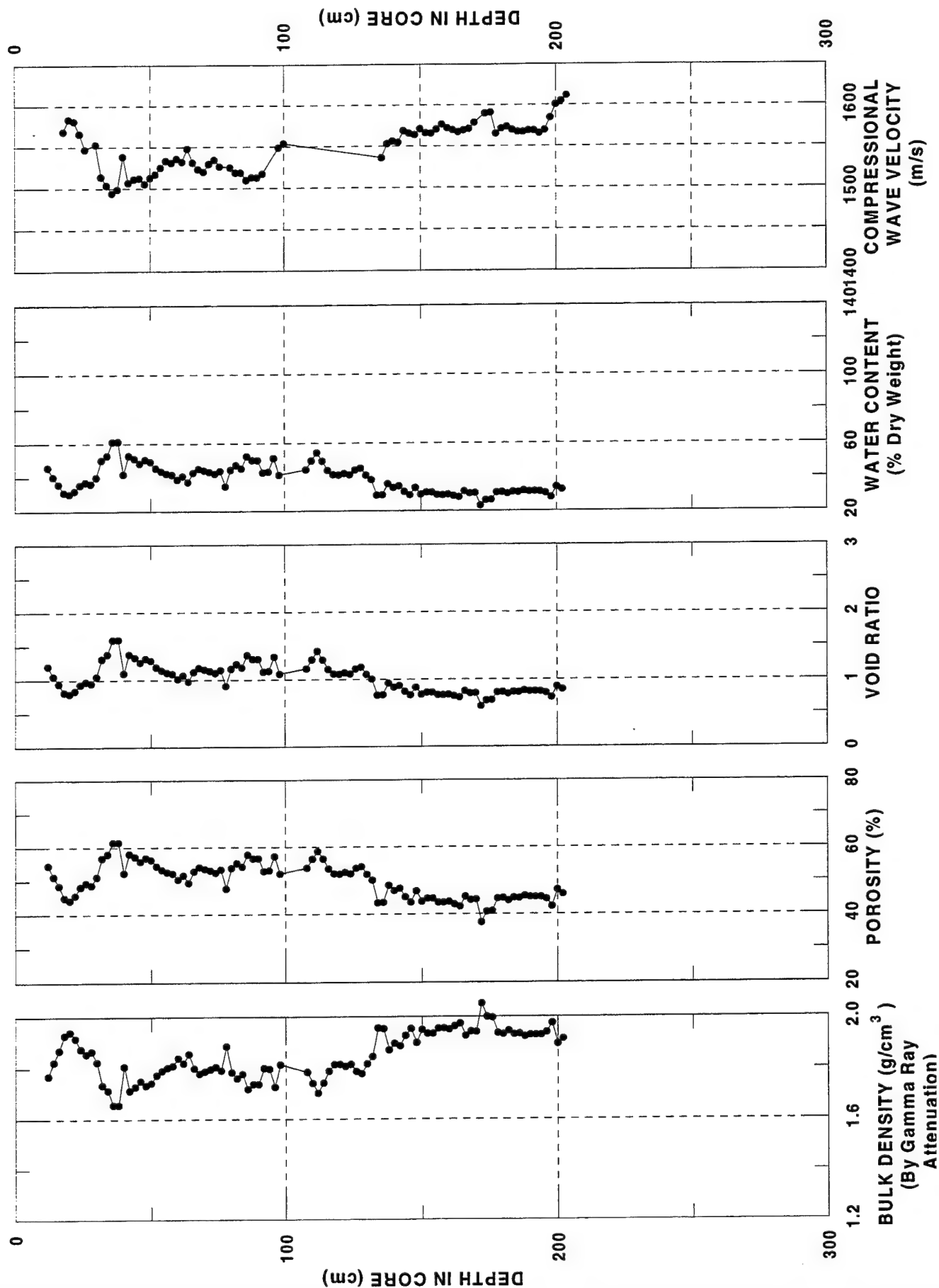
Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
0						62	1.79	44.48	1.16	53.70	1519
2						64	1.80	43.44	1.13	53.11	1517
4						66	1.78	45.65	1.19	54.34	1509
6						68	1.71	53.10	1.38	58.06	1486
8						70	1.72	52.19	1.36	57.64	1486
10						72	1.71	53.39	1.39	58.19	1487
12						74	1.70	54.68	1.43	58.78	1484
14						76	1.70	55.69	1.45	59.22	1485
16	1.64	64.50	1.68	62.71	1512	78	1.71	53.87	1.40	58.41	1489
18	1.76	46.94	1.22	55.04	1512	80	1.73	50.67	1.32	56.92	1495
20	1.79	43.87	1.14	53.36	1502	82	1.74	50.21	1.31	56.69	1510
22	1.79	43.94	1.15	53.39	1513	84	1.76	47.43	1.24	55.29	1519
24	1.87	36.13	0.94	48.51	1516	86	1.79	43.64	1.14	53.22	1538
26	1.69	56.41	1.47	59.53	1490	88	1.85	38.35	1.00	50.00	1545
28	1.69	57.13	1.49	59.83	1489	90	1.76	47.14	1.23	55.14	1526
30	1.73	51.58	1.34	57.35	1499	92	1.65	62.59	1.63	62.01	1493
32	1.69	57.12	1.49	59.83	1485	94	1.65	62.11	1.62	61.82	1499
34	1.70	55.63	1.45	59.19	1491	96	1.66	61.33	1.60	61.53	1509
36	1.80	42.95	1.12	52.83	1500	98	1.79	44.43	1.16	53.67	1536
38	1.69	56.77	1.48	59.68	1482	100	1.69	56.22	1.47	59.45	1547
40	1.69	56.63	1.48	59.62	1484	102					
42	1.71	53.70	1.40	58.34	1489	104	1.49	98.49	2.57	71.97	
44	1.83	40.14	1.05	51.14	1538	106	1.62	68.41	1.78	64.08	1496
46	1.89	34.16	0.89	47.11	1519	108	1.73	51.60	1.35	57.36	1495
48	1.96	29.34	0.77	43.34	1565	110	1.71	53.42	1.39	58.21	1507
50	1.87	36.40	0.95	48.70	1548	112	1.69	55.82	1.46	59.28	1515
52	1.86	37.48	0.98	49.43	1563	114	1.72	52.49	1.37	57.78	1502
54	1.79	43.84	1.14	53.34	1519	116	1.69	56.87	1.48	59.72	1544
56	1.77	46.31	1.21	54.70	1507	118	1.79	44.06	1.15	53.46	1561
58	1.77	46.68	1.22	54.90	1504	120	1.91	32.66	0.85	45.99	1537
60	1.84	38.89	1.01	50.35	1535	122	2.04	23.74	0.62	38.24	

## Hm 87

## Hm 87

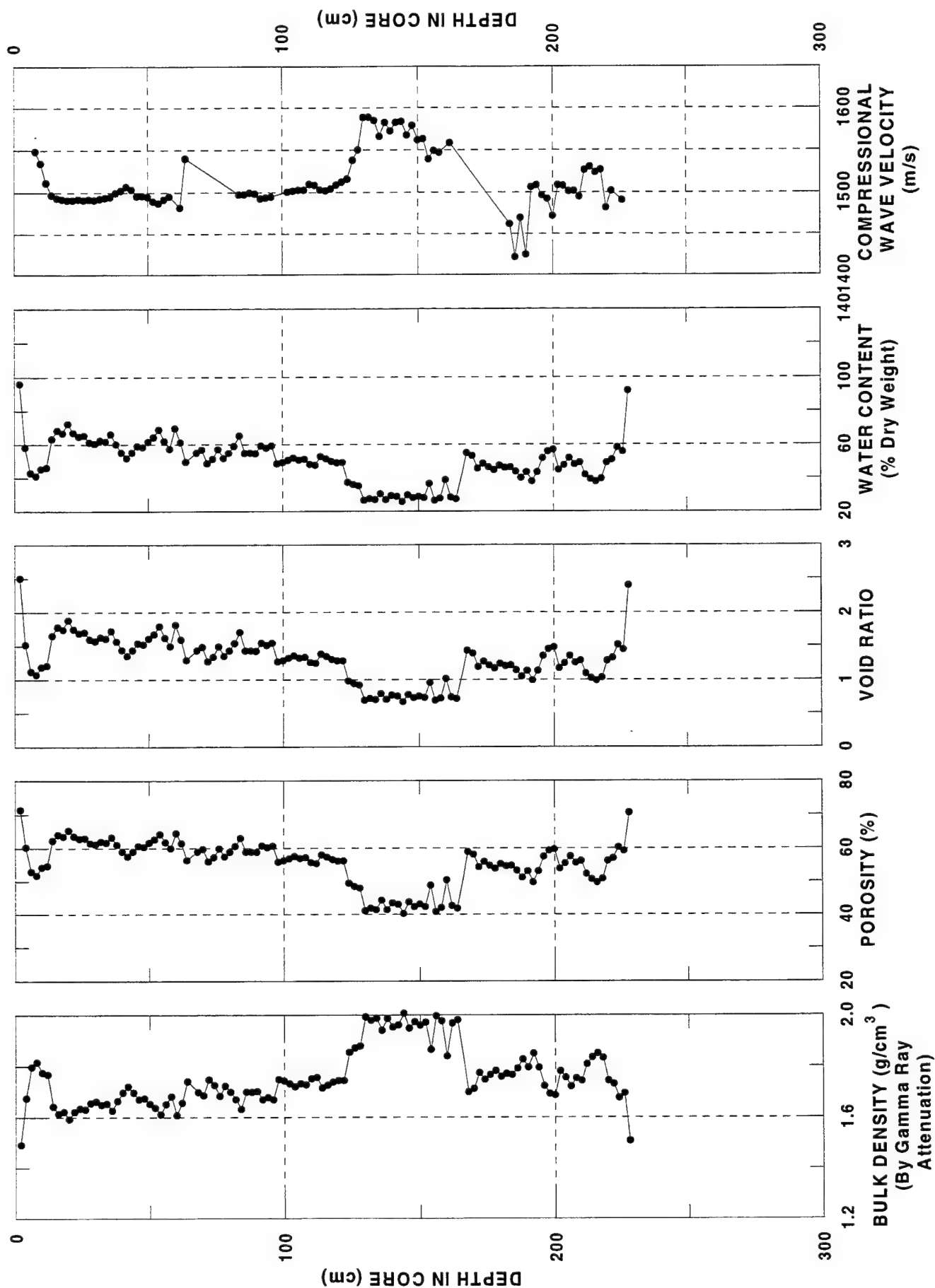
Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)	Sample Depth (cm)	Wet Bulk Density (g/cm <sup>3</sup> )	Water Content (%)	Void Ratio	Porosity (%)	Vp (m/s)
124	1.79	44.49	1.16	53.71	1512	188	1.74	49.59	1.29	56.39	1498
126	1.88	35.56	0.93	48.11	1569	190	1.82	41.25	1.08	51.82	1507
128	1.93	30.95	0.81	44.66	1604	192	1.71	53.41	1.39	58.21	1496
130	1.95	29.77	0.78	43.70	1607	194	1.78	45.50	1.19	54.26	1496
132	1.89	34.48	0.90	47.34	1588	196	1.65	62.50	1.63	61.97	
134	2.06	22.43	0.58	36.90		198	1.81	42.44	1.11	52.53	1519
136	2.16	17.25	0.45	31.02		200					
138	2.05	22.92	0.60	37.41		202					
140	1.81	42.18	1.10	52.37	1521	204					
142	1.74	50.37	1.31	56.77	1503	206	1.70	54.61	1.42	58.74	
144	1.74	49.75	1.30	56.47	1497	208	1.77	46.25	1.21	54.67	1506
146	1.75	48.04	1.25	55.61	1502	210	1.76	47.73	1.24	55.45	1502
148	1.72	51.92	1.35	57.52	1498	212	1.76	47.12	1.23	55.13	1502
150	1.71	53.50	1.39	58.24	1502	214	1.74	50.03	1.30	56.61	1495
152	1.89	34.35	0.90	47.24	1507	216	1.74	49.56	1.29	56.37	1493
154	1.78	45.04	1.17	54.01	1527	218	1.73	51.27	1.34	57.20	1493
156	1.74	49.79	1.30	56.49	1516	220	1.76	48.01	1.25	55.59	1494
158	1.76	47.65	1.24	55.41	1504	222	1.75	48.40	1.26	55.79	1495
160	1.80	42.51	1.11	52.57	1518	224	1.77	46.50	1.21	54.80	1499
162	1.74	49.60	1.29	56.40	1512	226	1.74	49.23	1.28	56.21	1502
164	1.79	44.41	1.16	53.66	1522	228	1.75	49.05	1.28	56.12	1499
166	1.79	43.81	1.14	53.32	1520	230	1.83	40.14	1.05	51.14	1507
168	1.76	47.57	1.24	55.36	1522	232	1.86	37.19	0.97	49.23	1509
170	1.73	50.44	1.32	56.81	1513	234	1.74	50.30	1.31	56.74	1497
172	1.73	50.98	1.33	57.07	1507	236	1.76	47.47	1.24	55.31	1498
174	1.73	51.47	1.34	57.30	1498	238	1.75	48.21	1.26	55.69	1498
176	1.69	55.93	1.46	59.32	1498	240	1.74	49.88	1.30	56.53	1497
178	1.70	55.01	1.43	58.92	1497	242	1.87	36.05	0.94	48.45	1505
180	1.73	51.08	1.33	57.12	1498	244	1.74	49.79	1.30	56.49	1501
182	1.73	51.59	1.35	57.36	1505	246	1.62	66.86	1.74	63.55	
184	1.75	48.81	1.27	56.00	1495	248					1464
186	1.83	40.40	1.05	51.30	1507						

# HM 3, TAMU GEOTEK LOGGER DATA

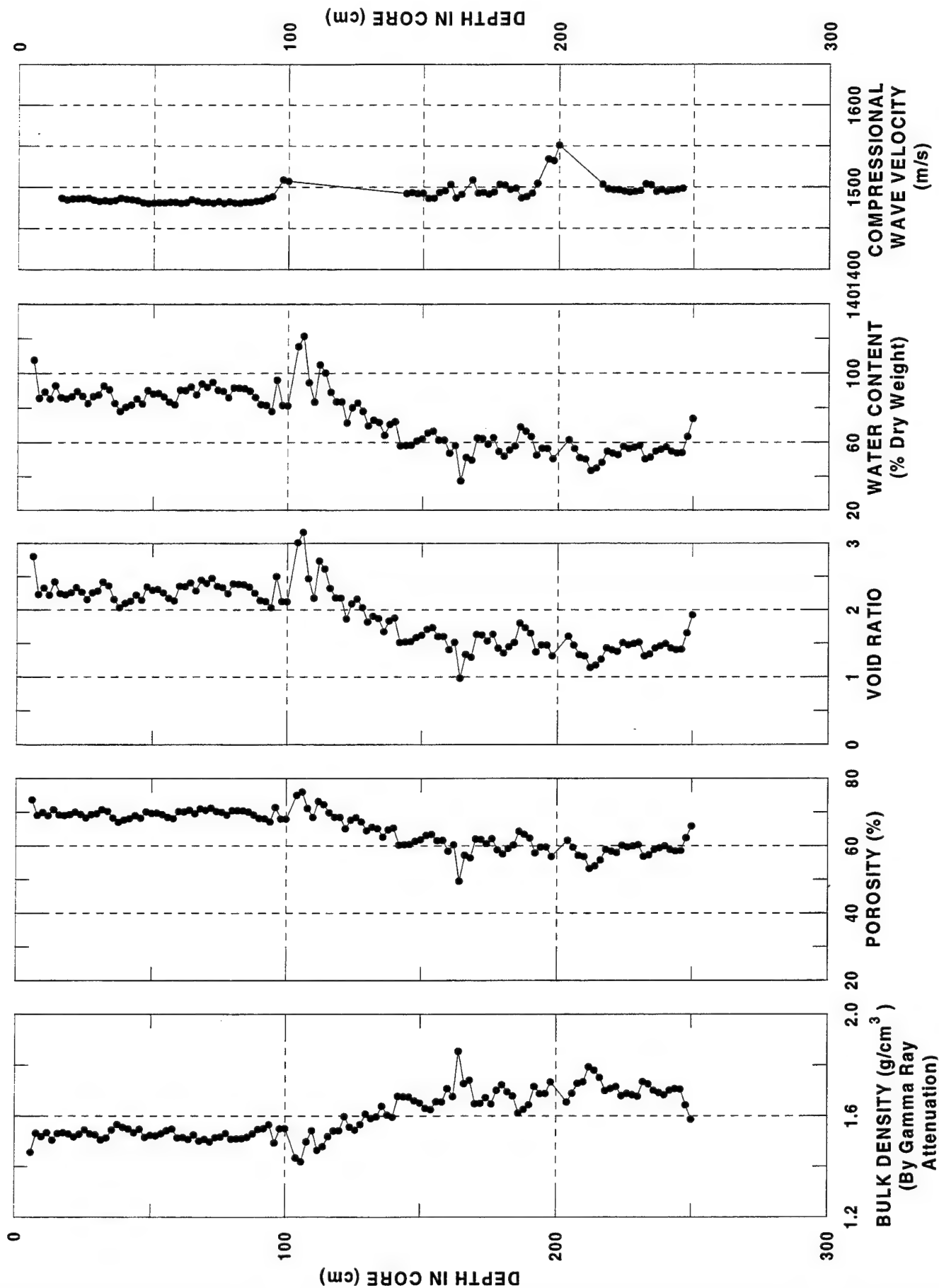




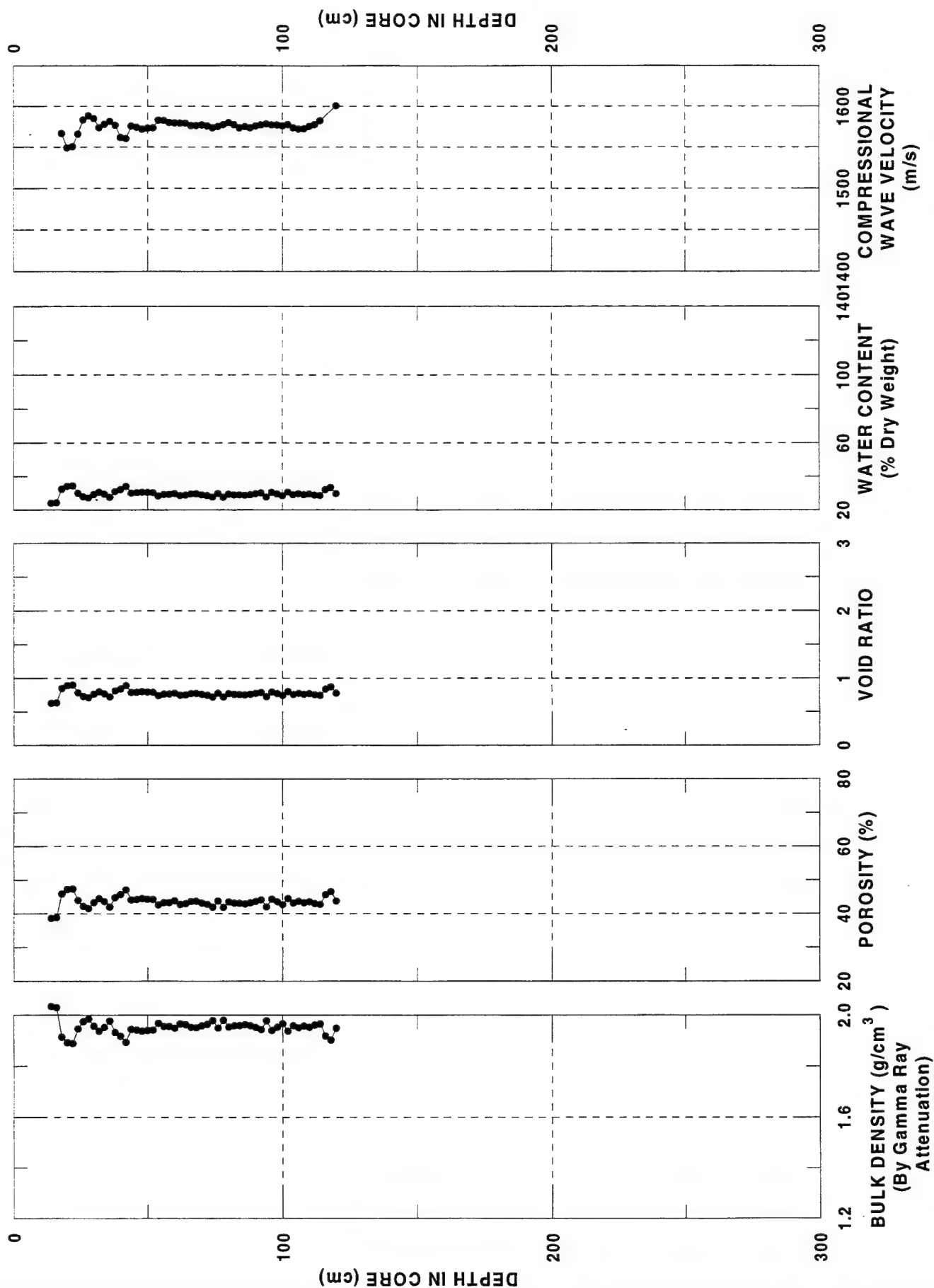
# HM 4, TAMU GEOTEK LOGGER DATA



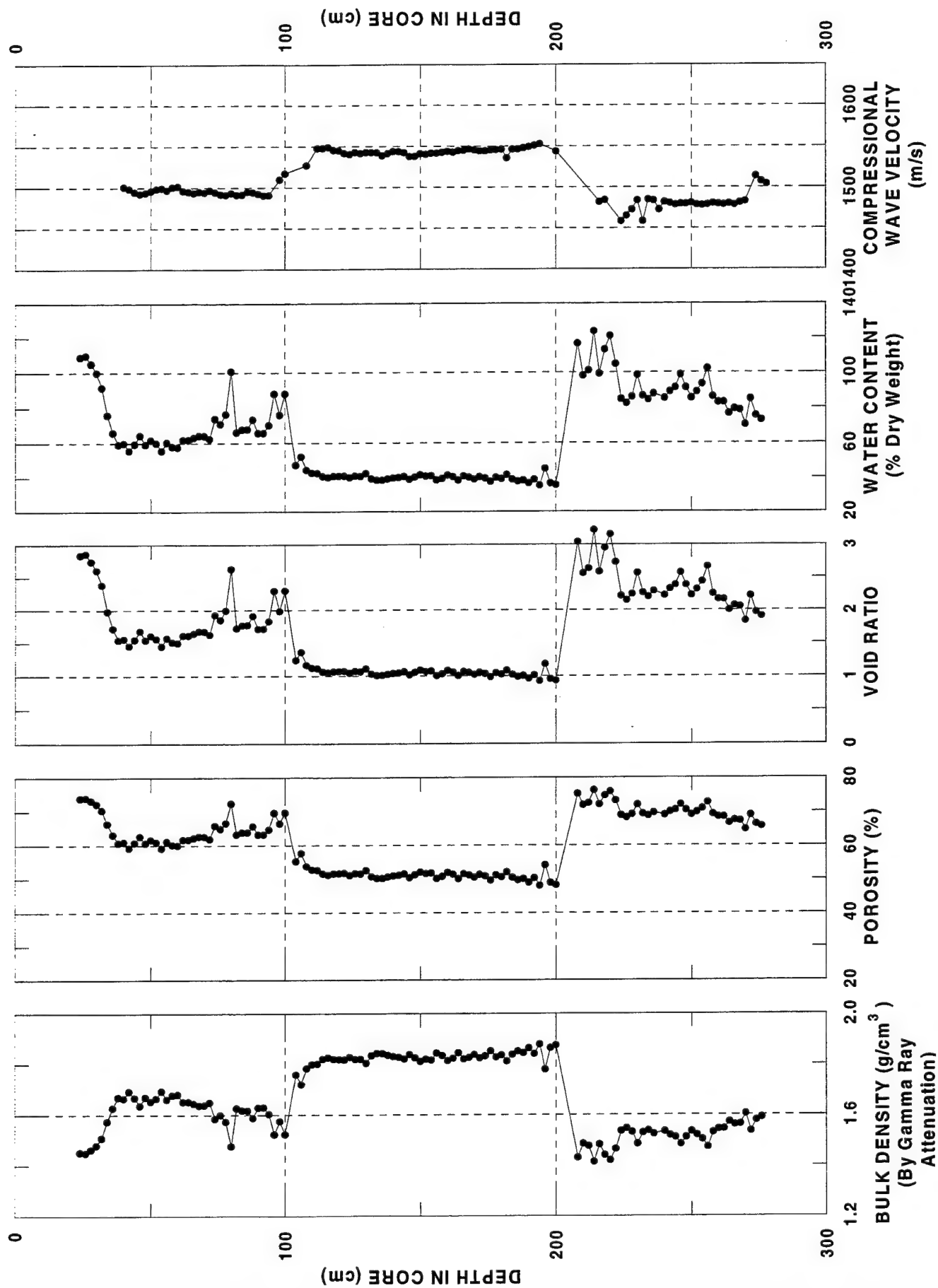
# HM 5, TAMU GEOTEK LOGGER DATA



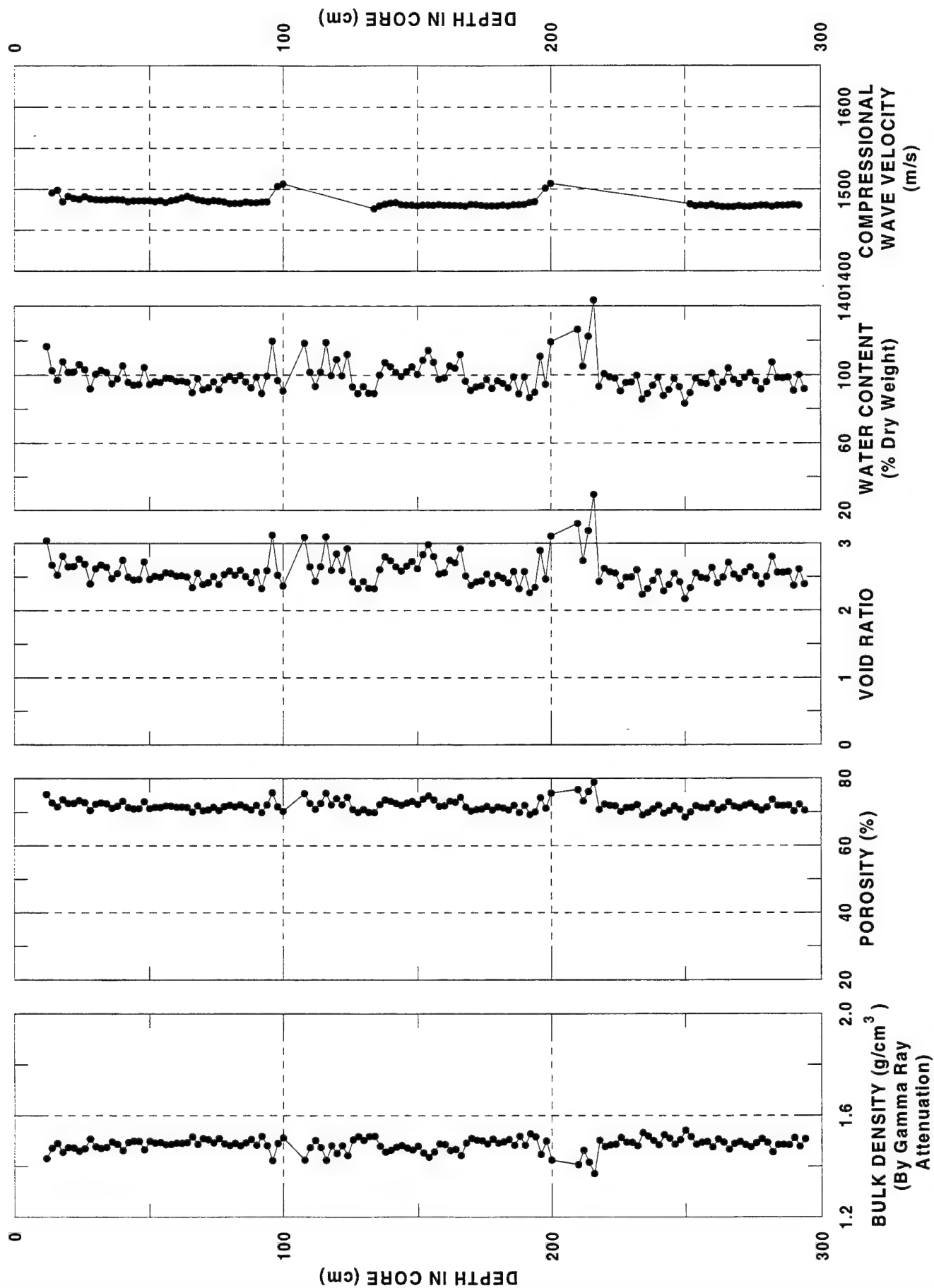
# HM 9, TAMU GEOTEK LOGGER DATA



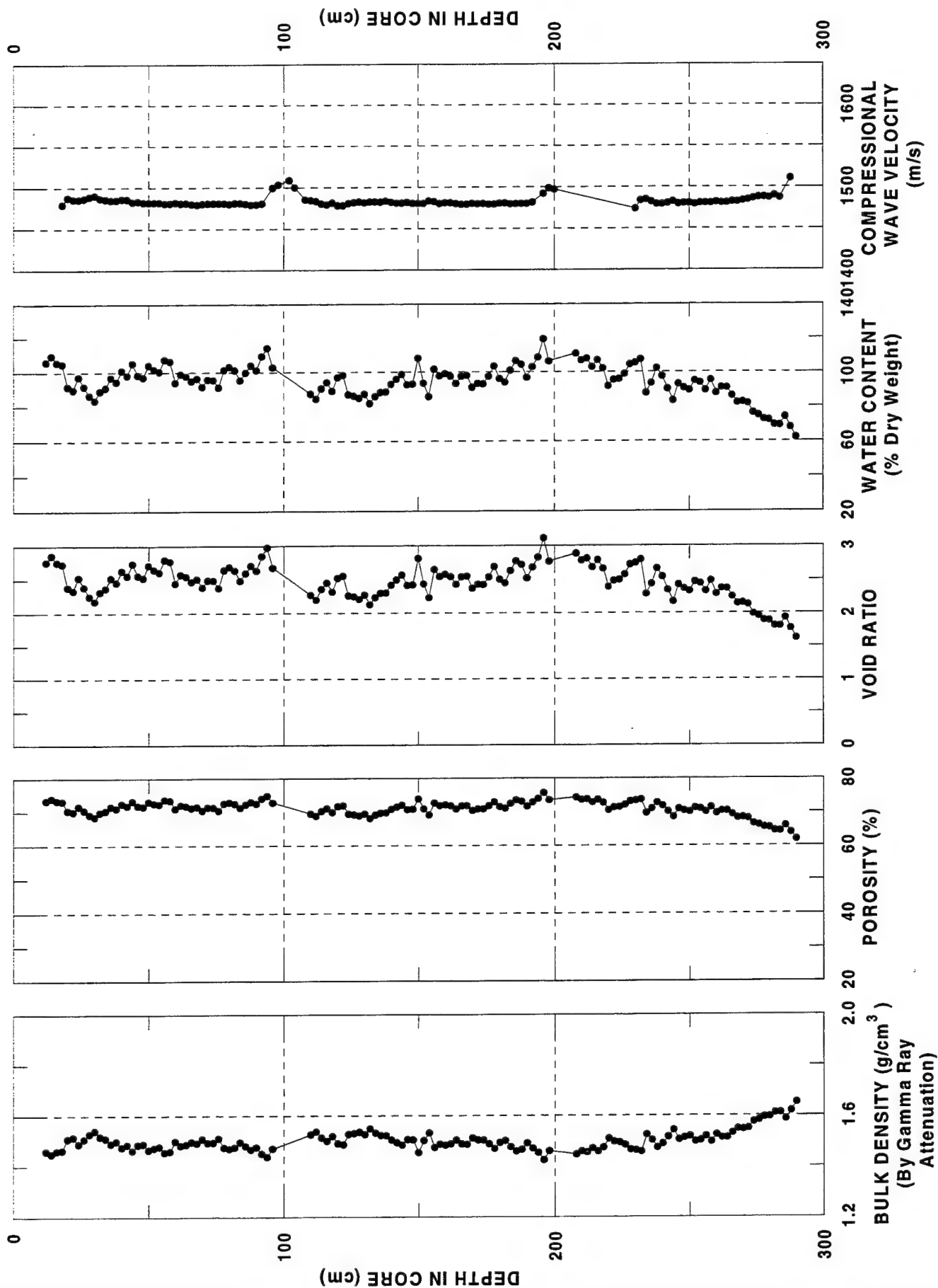
# HM 11, TAMU GEOTEK LOGGER DATA



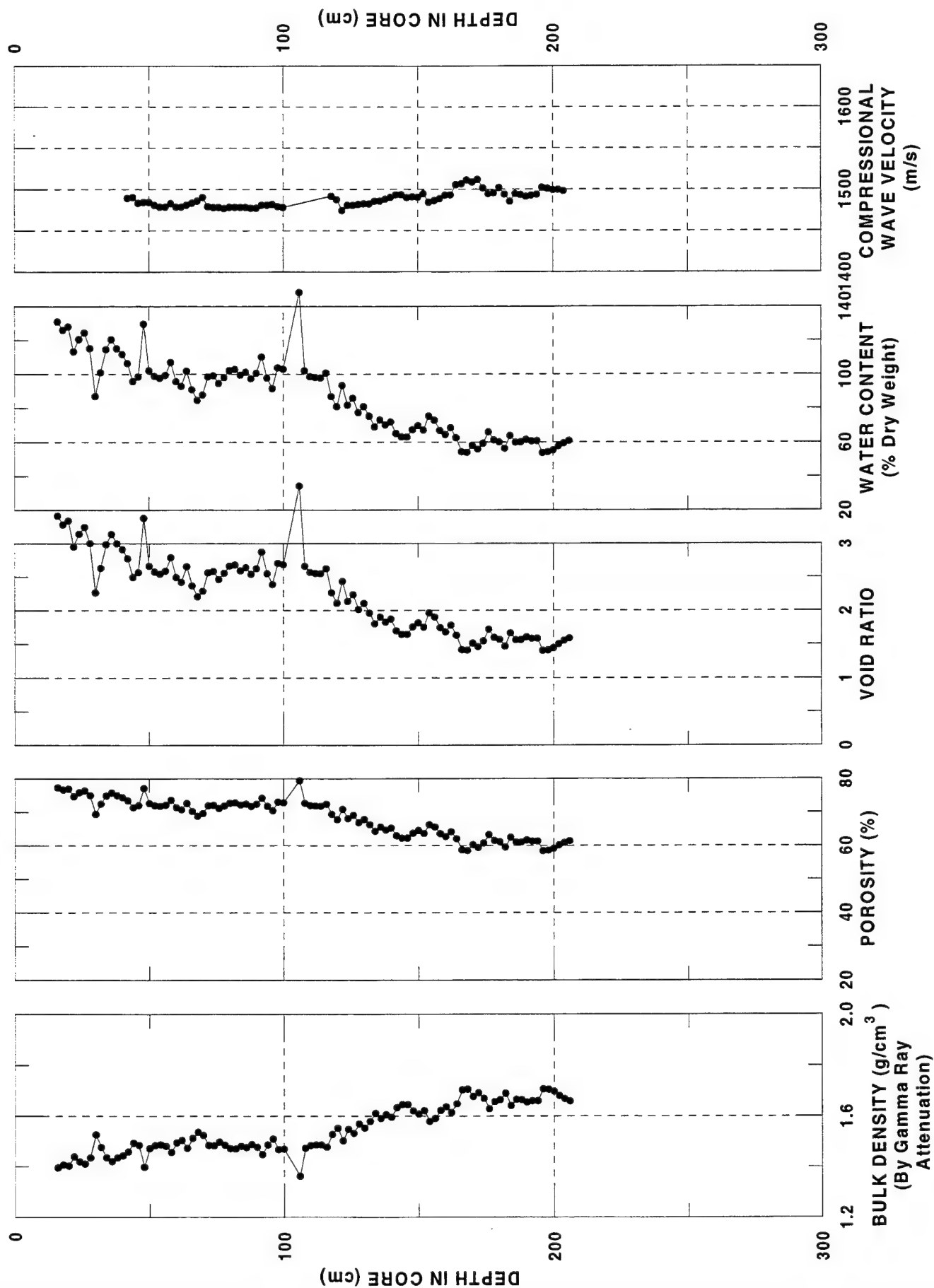
# HM 12, TAMU GEOTEK LOGGER DATA



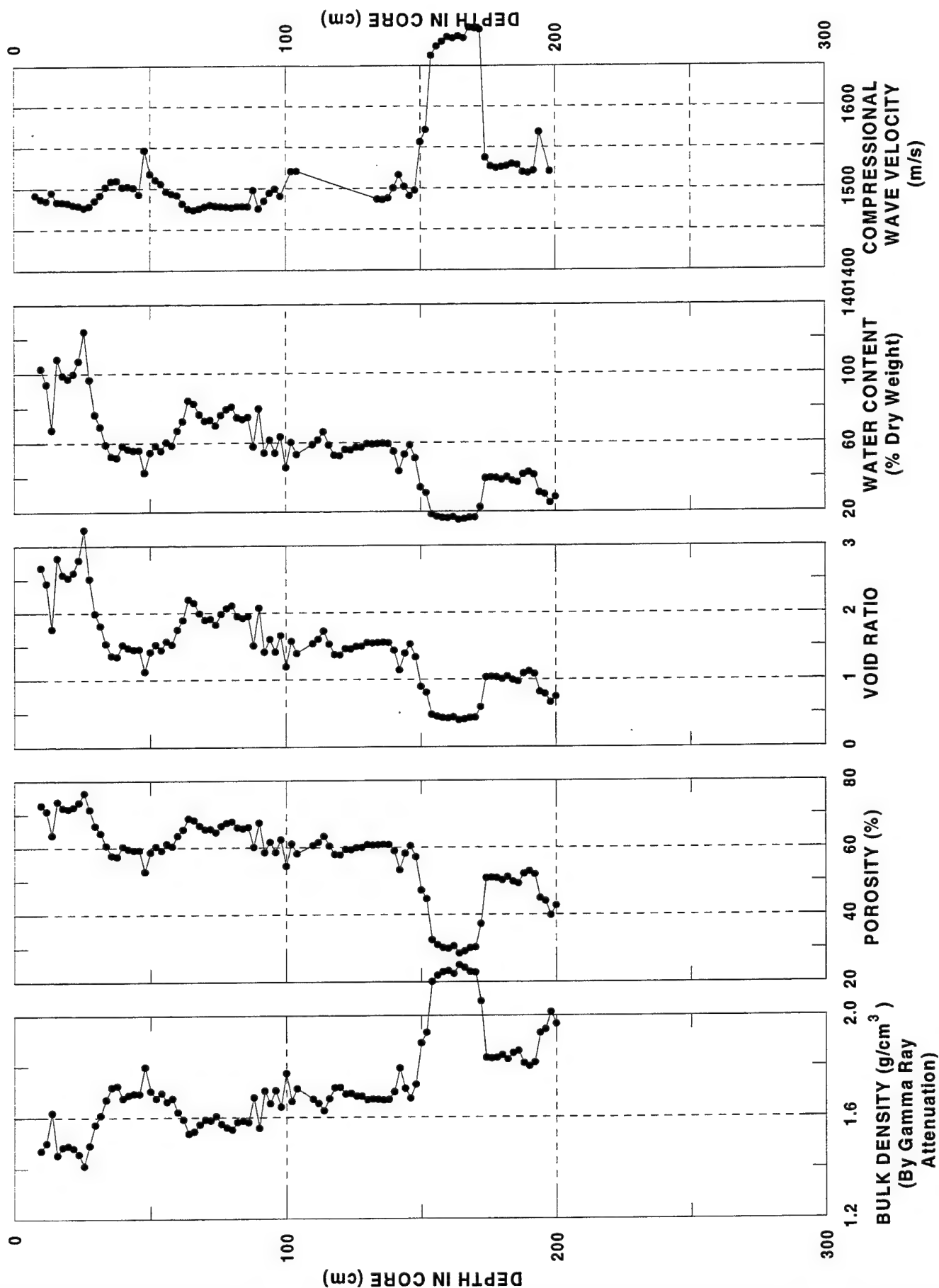
# HM 16, TAMU GEOTEK LOGGER DATA



# HM 17, TAMU GEOTEK LOGGER DATA

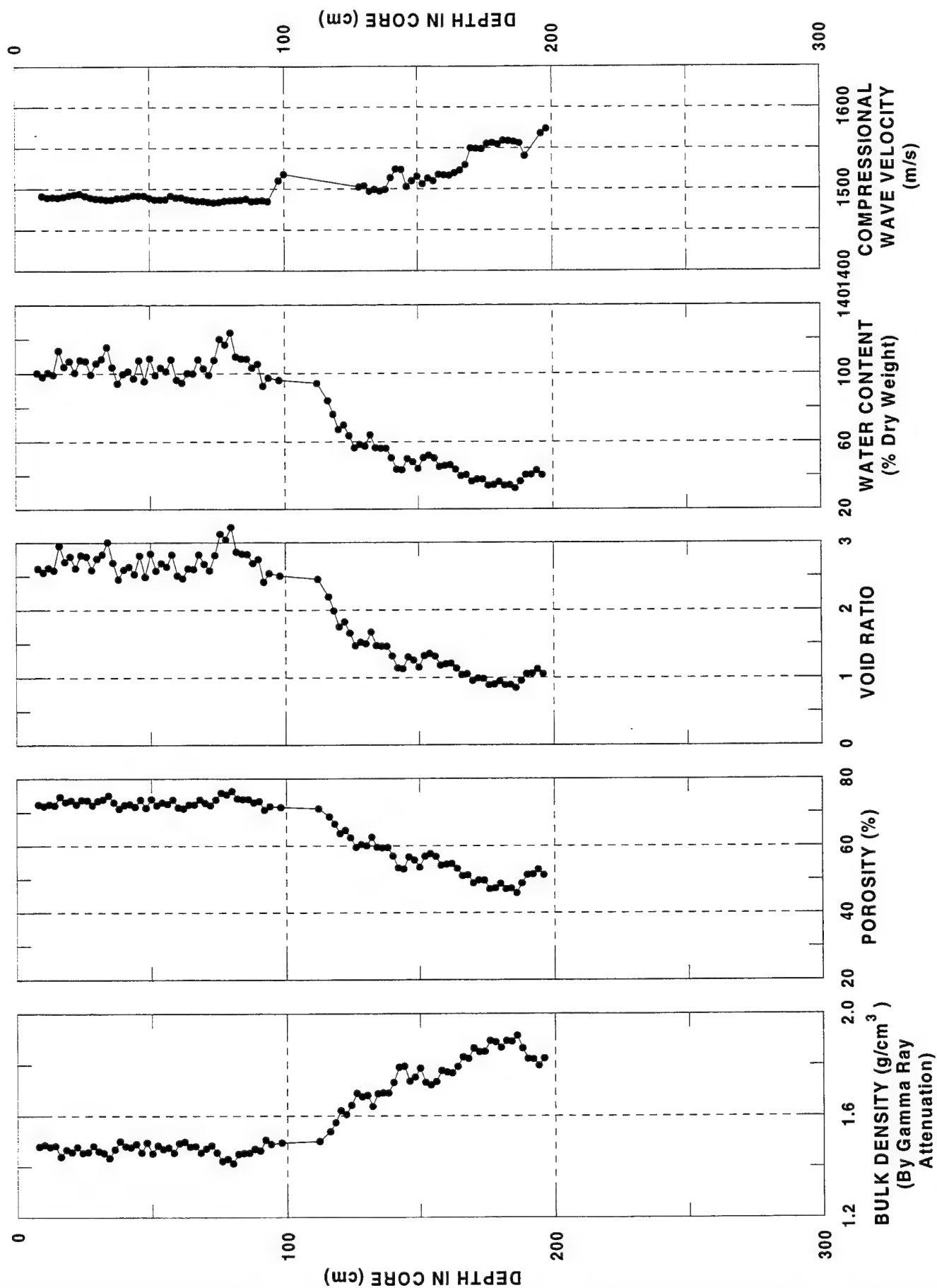


# HM 19, TAMU GEOTEK LOGGER DATA

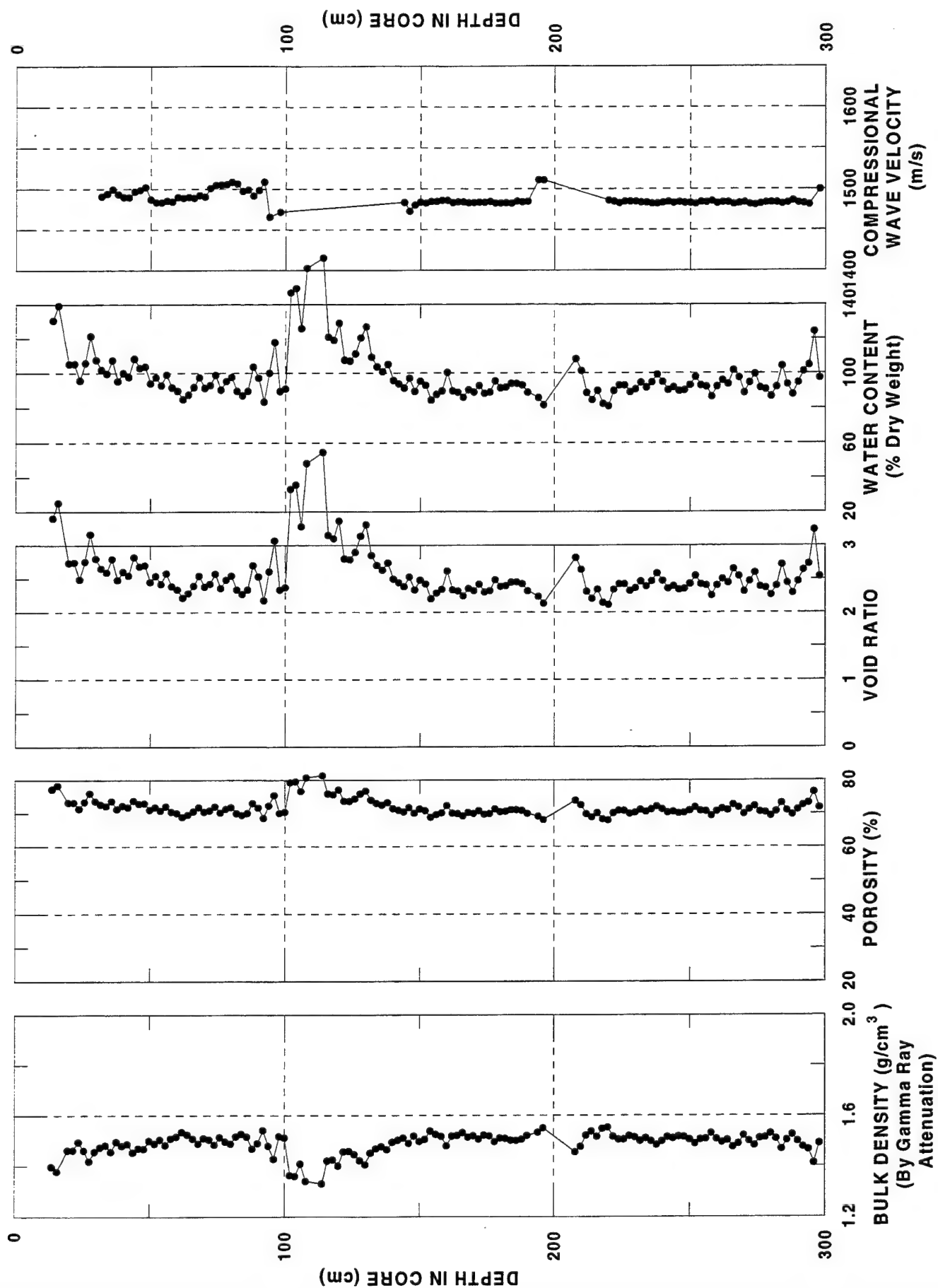




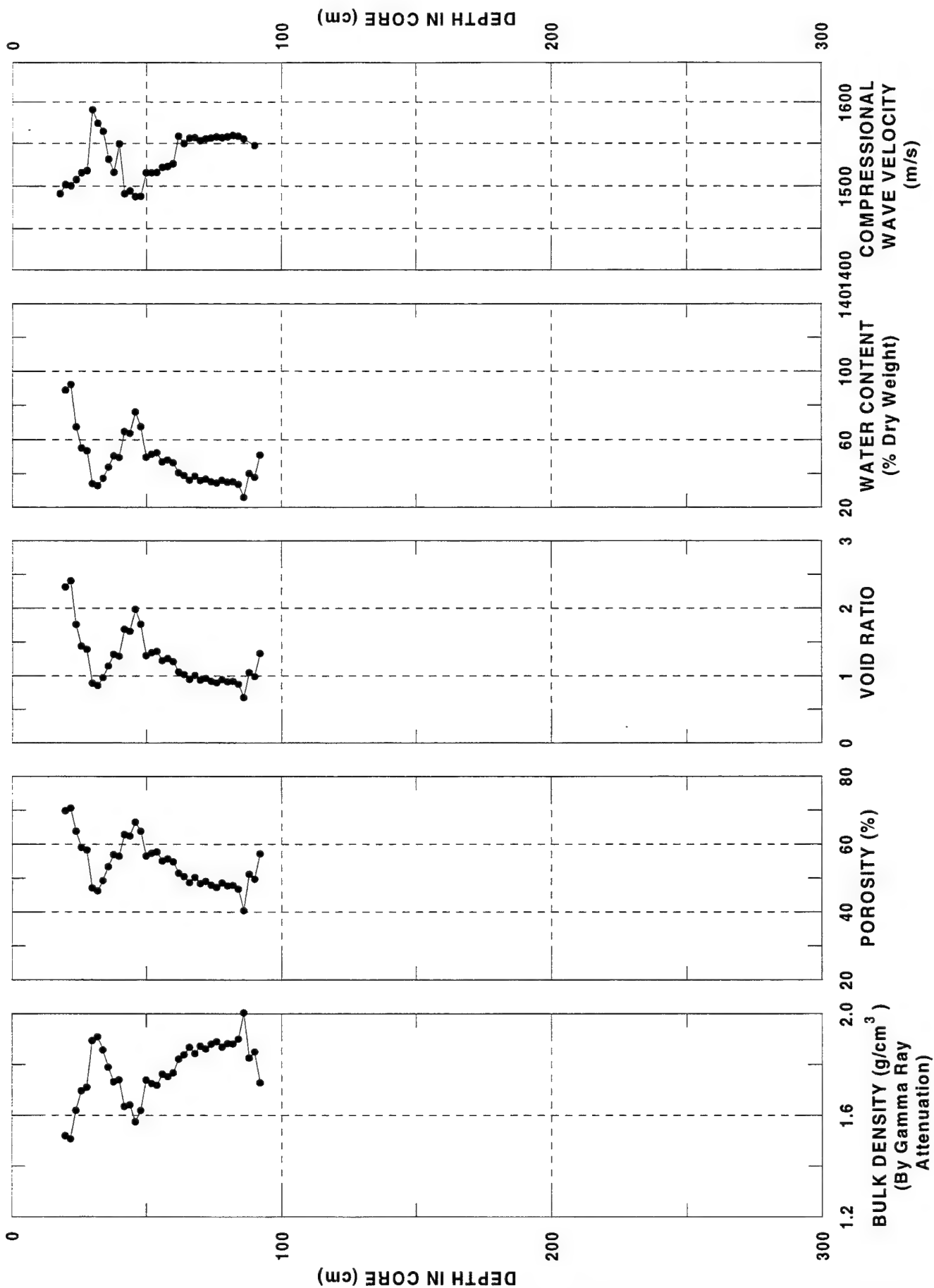
# HM 29, TAMU GEOTEK LOGGER DATA



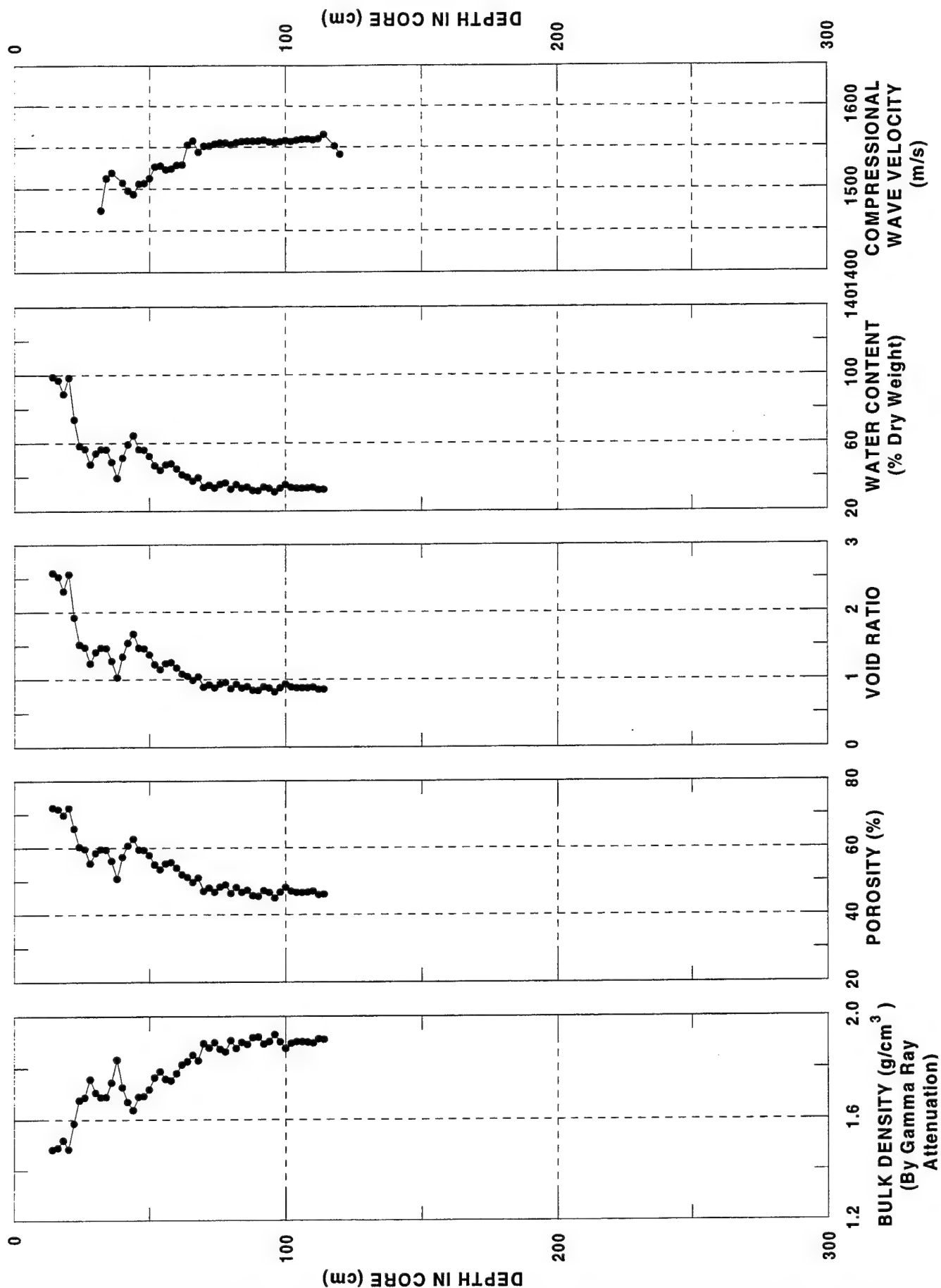
# HM 31, TAMU GEOTEK LOGGER DATA



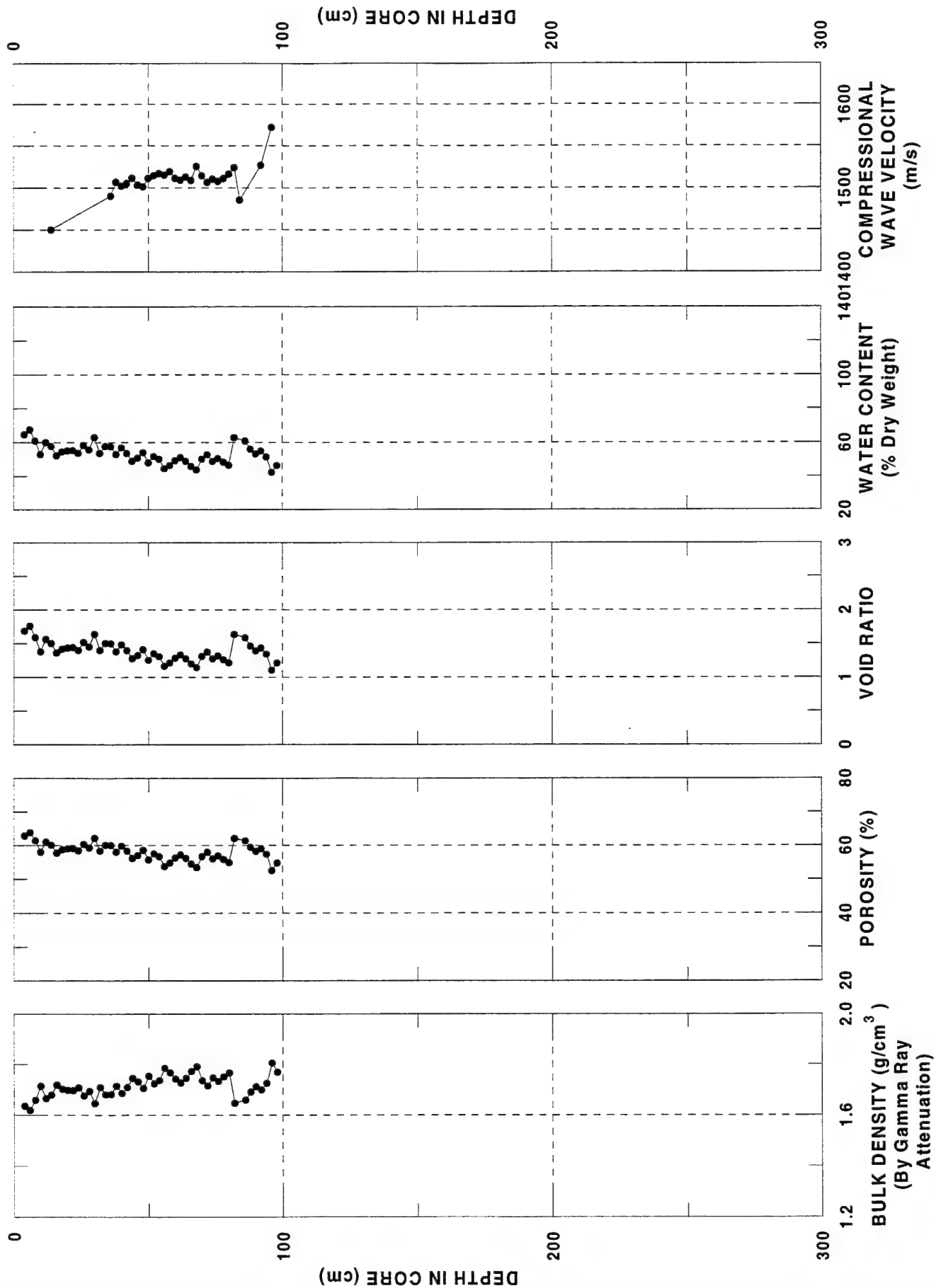
# HM 32, TAMU GEOTEK LOGGER DATA



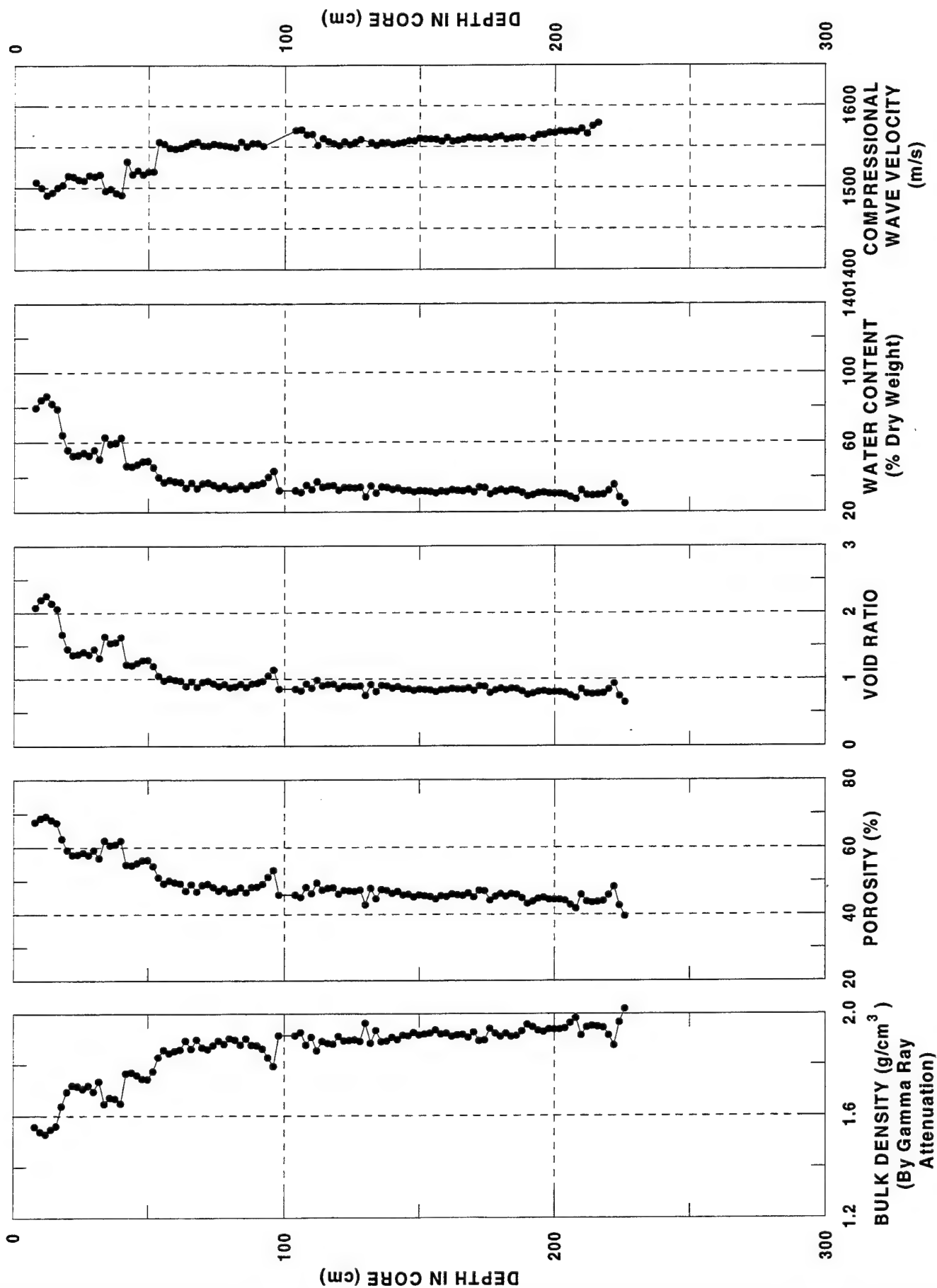
# HM 34, TAMU GEOTEK LOGGER DATA



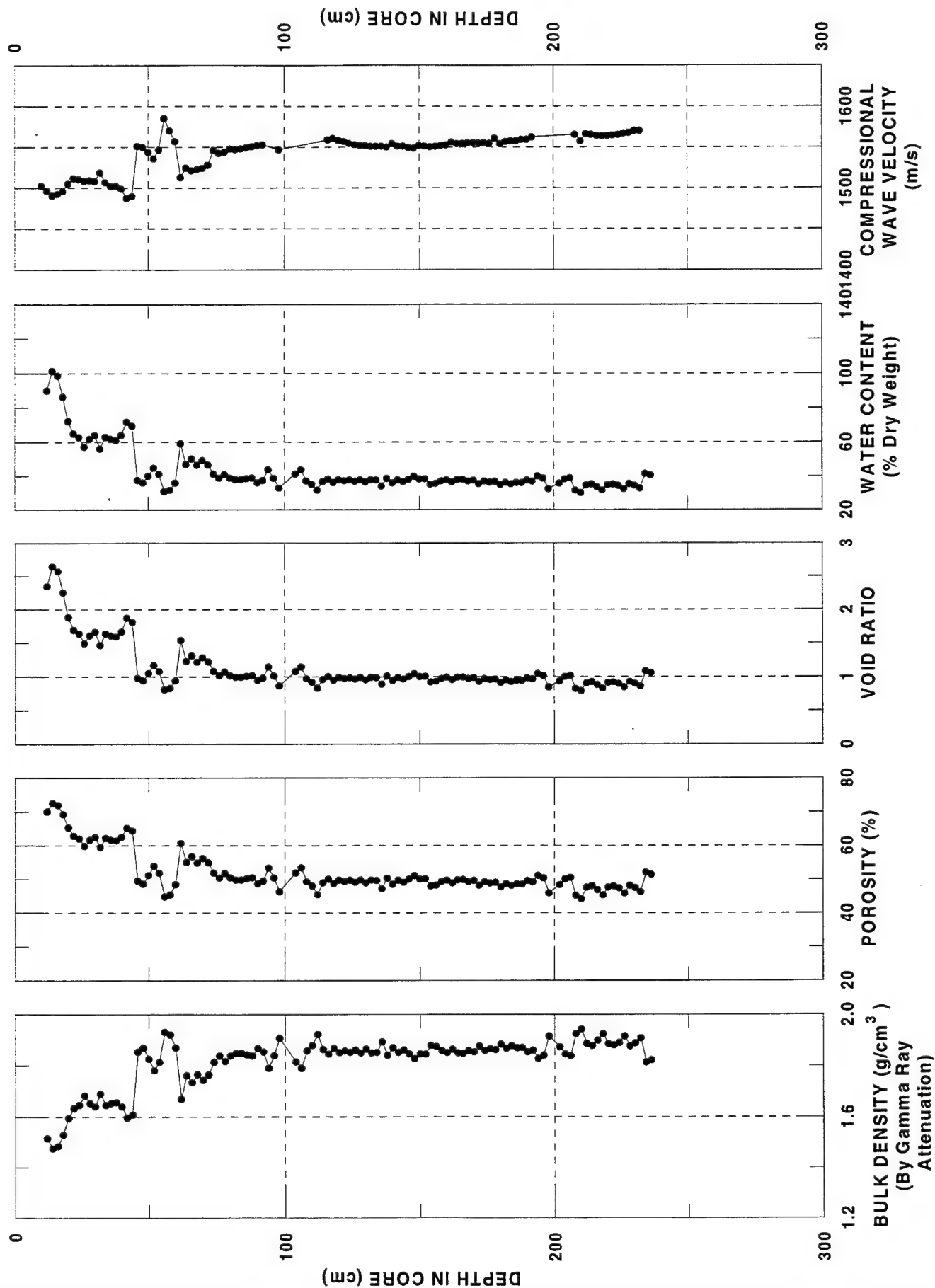
# HM 36, TAMU GEOTEK LOGGER DATA



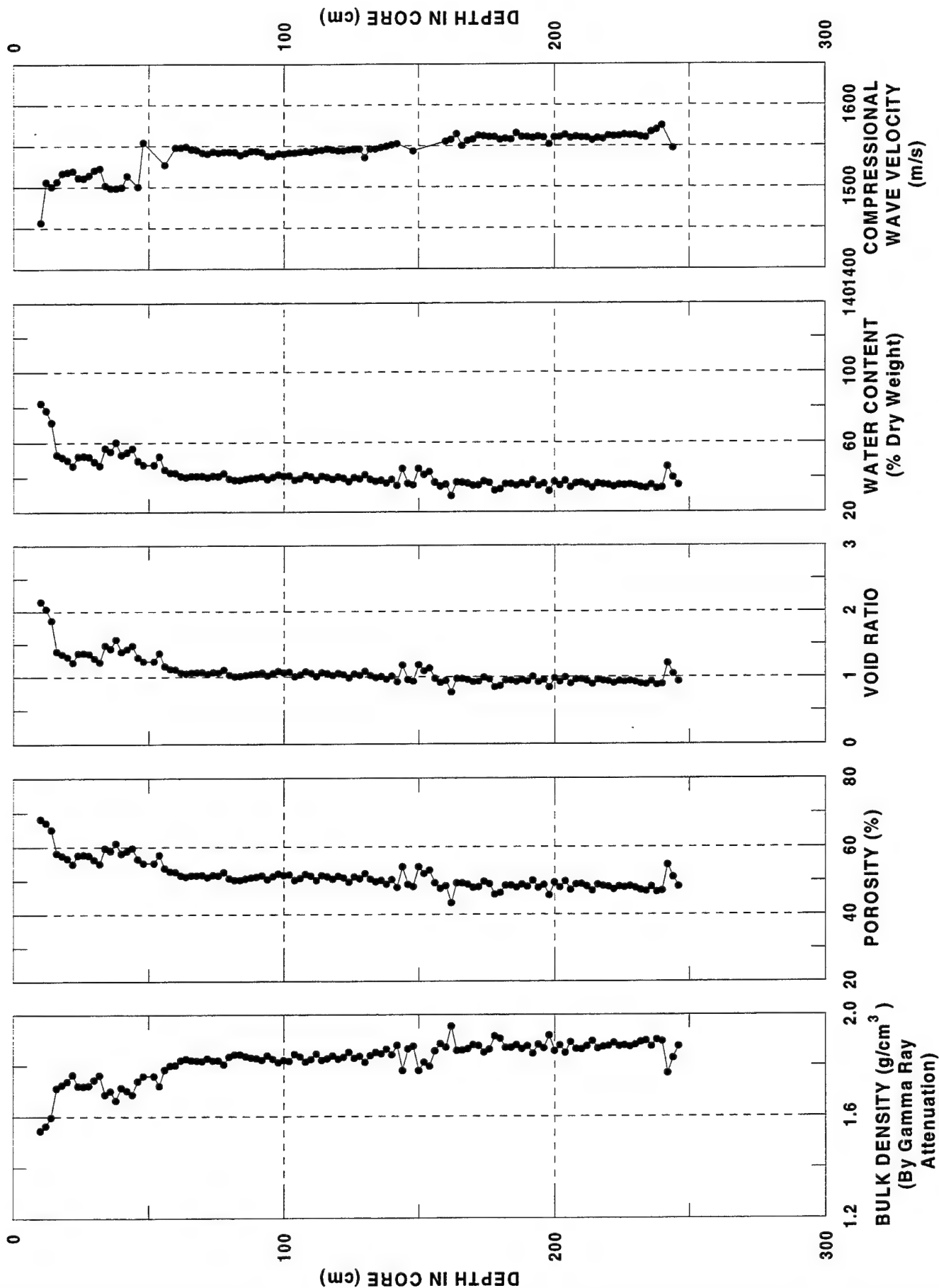
# HM 37, TAMU GEOTEK LOGGER DATA



# HM 38, TAMU GEOTEK LOGGER DATA

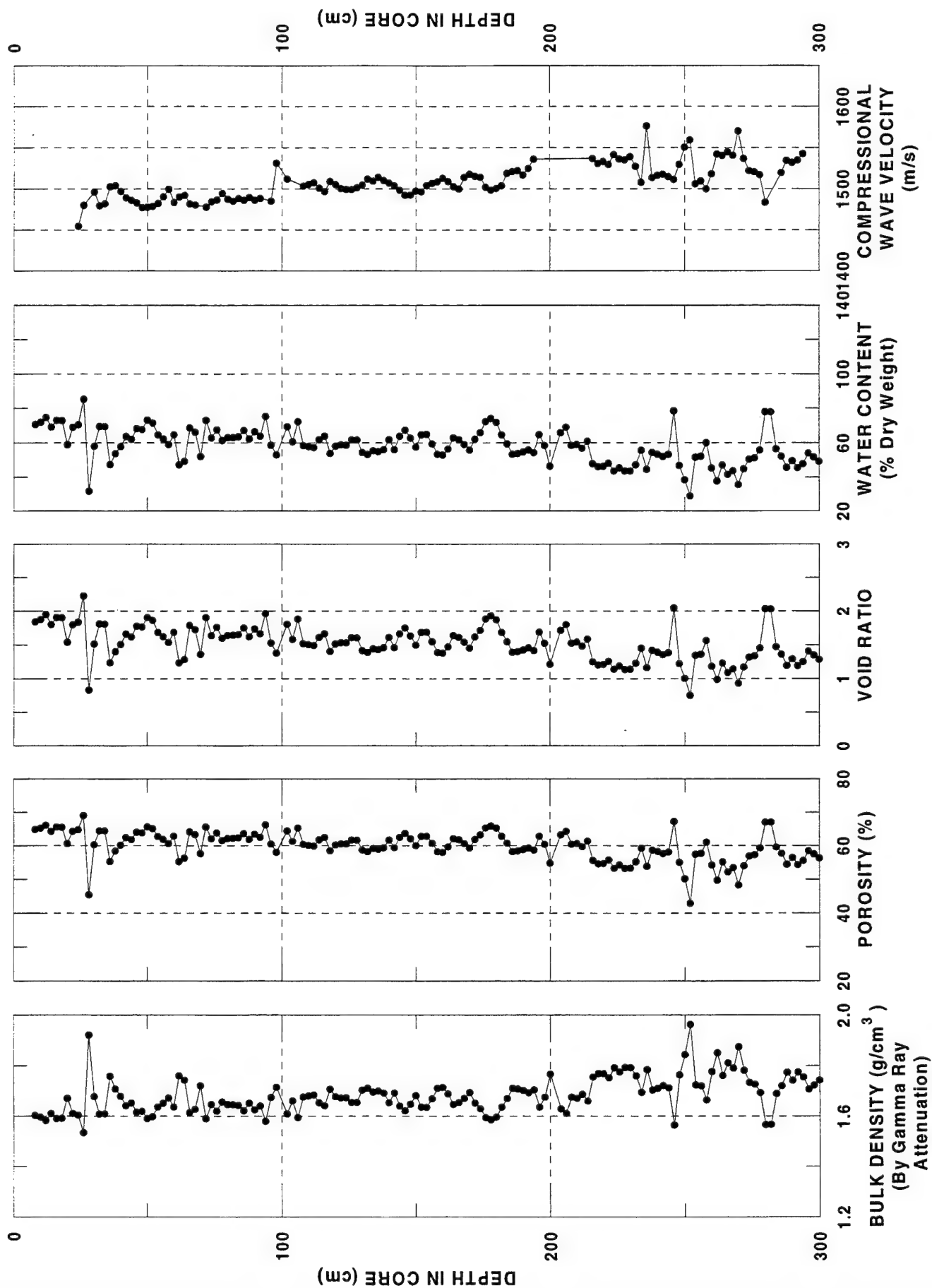


# HM 40, TAMU GEOTEK LOGGER DATA

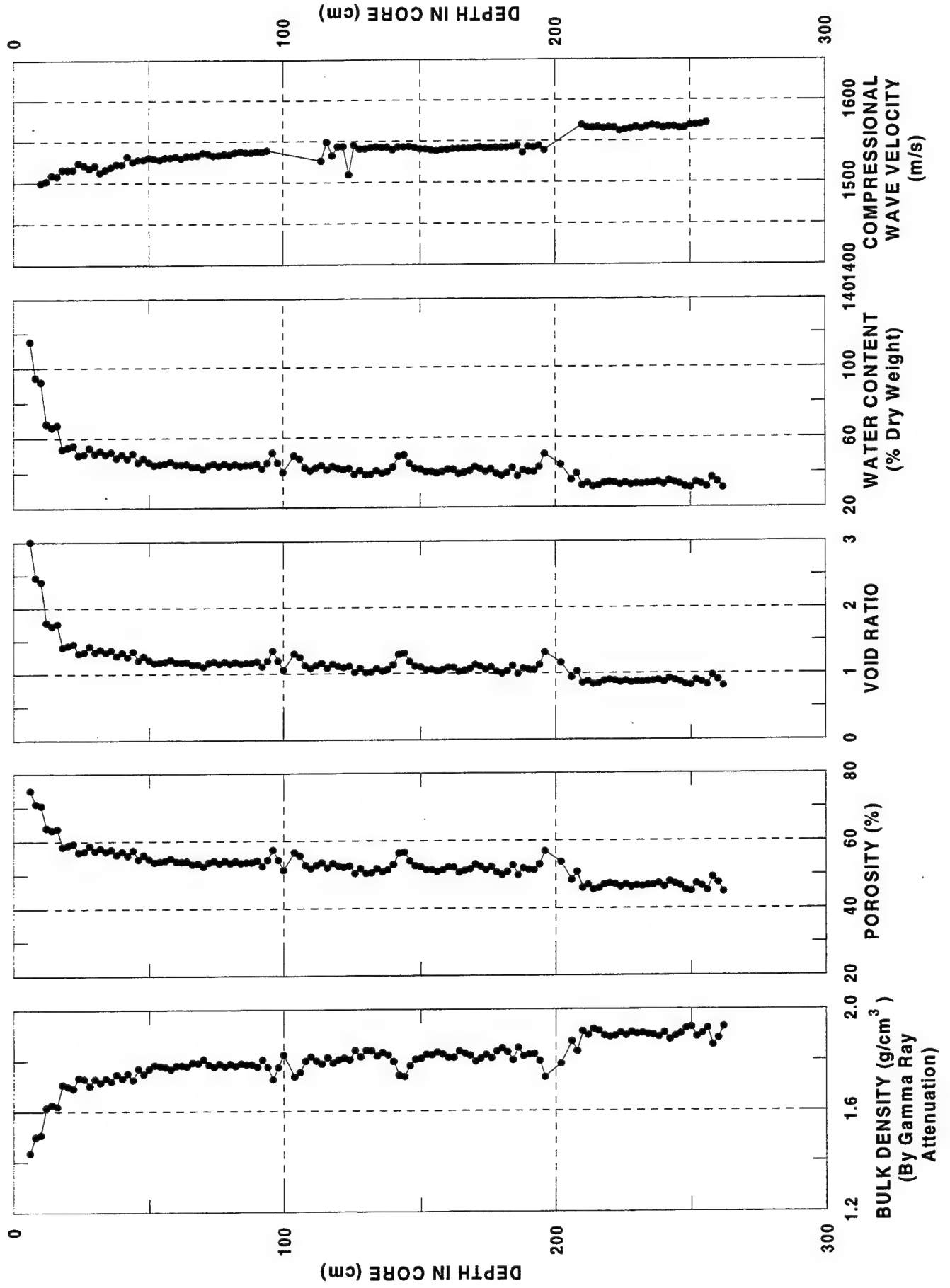




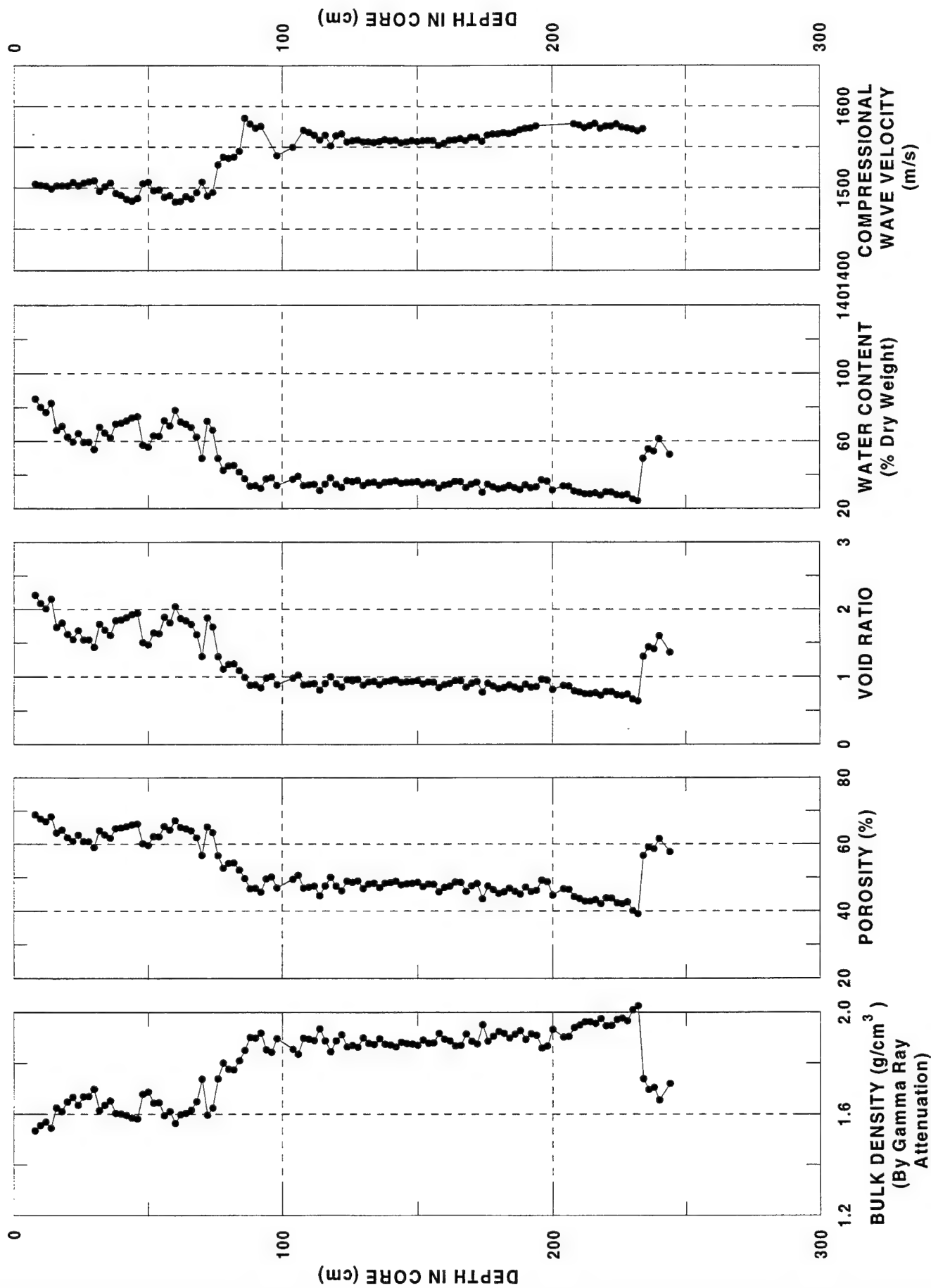
# HM 41, TAMU GEOTEK LOGGER DATA



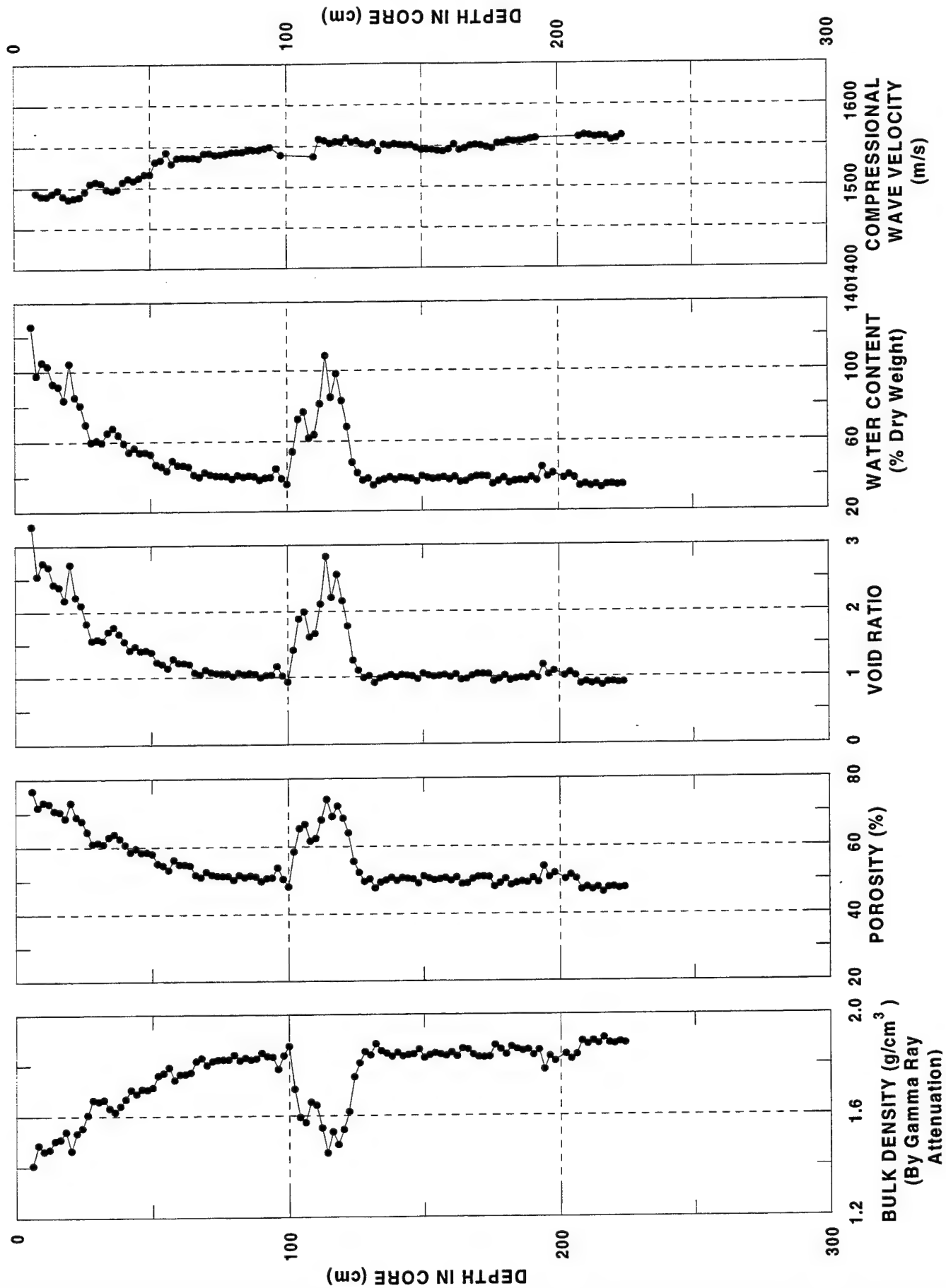
# HM 43, TAMU GEOTEK LOGGER DATA



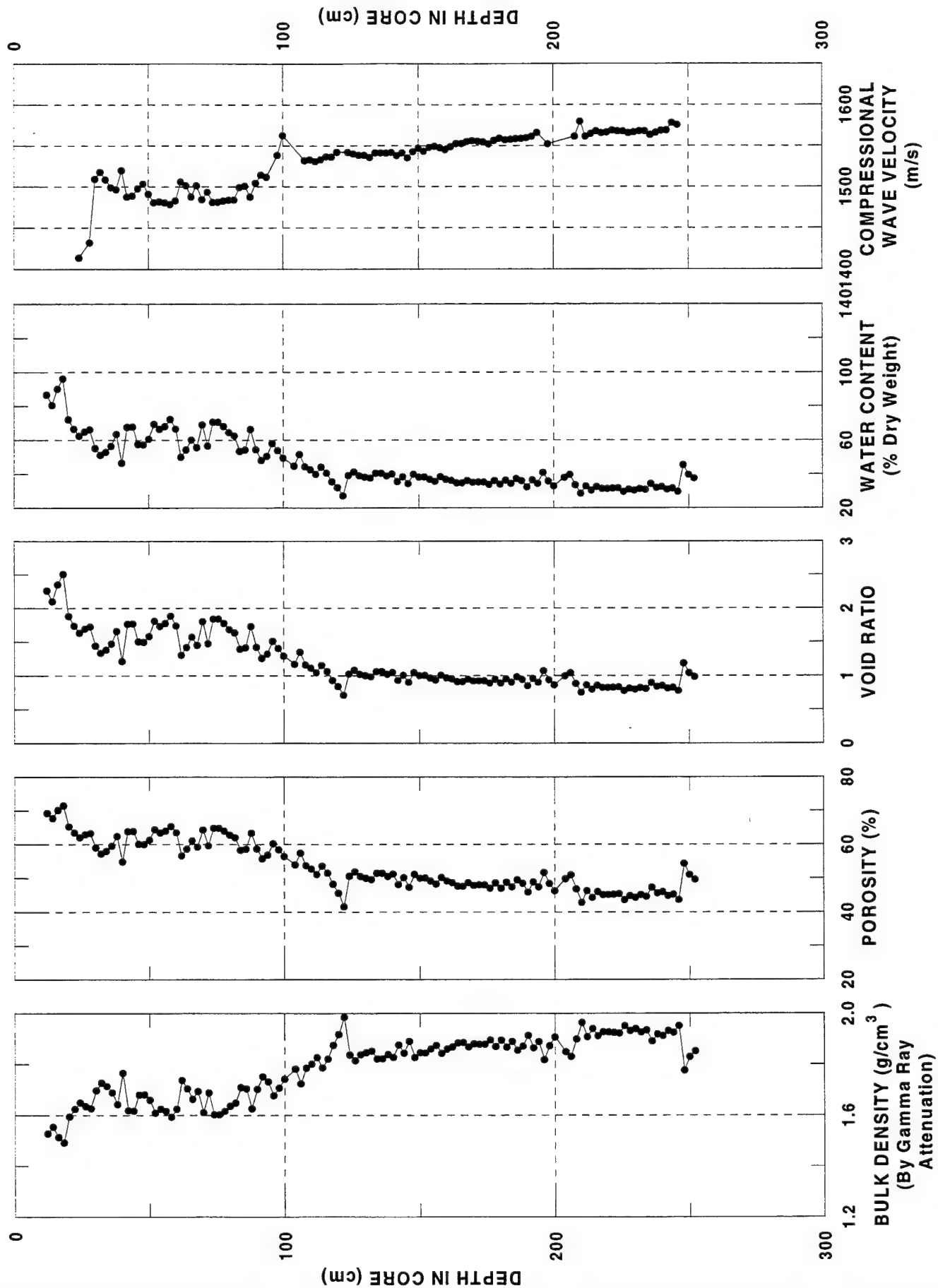
# HM 44, TAMU GEOTEK LOGGER DATA



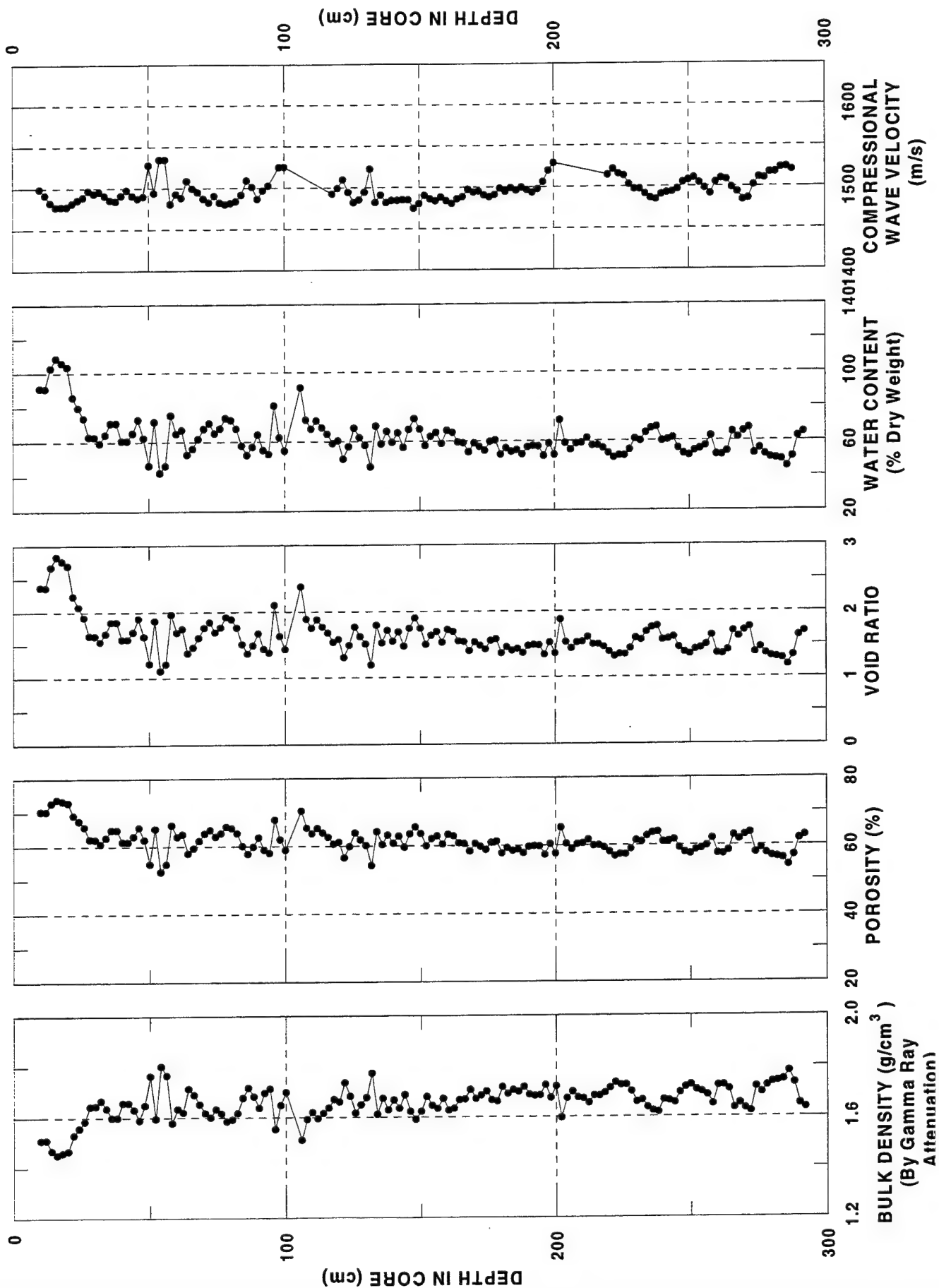
# HM 46, TAMU GEOTEK LOGGER DATA



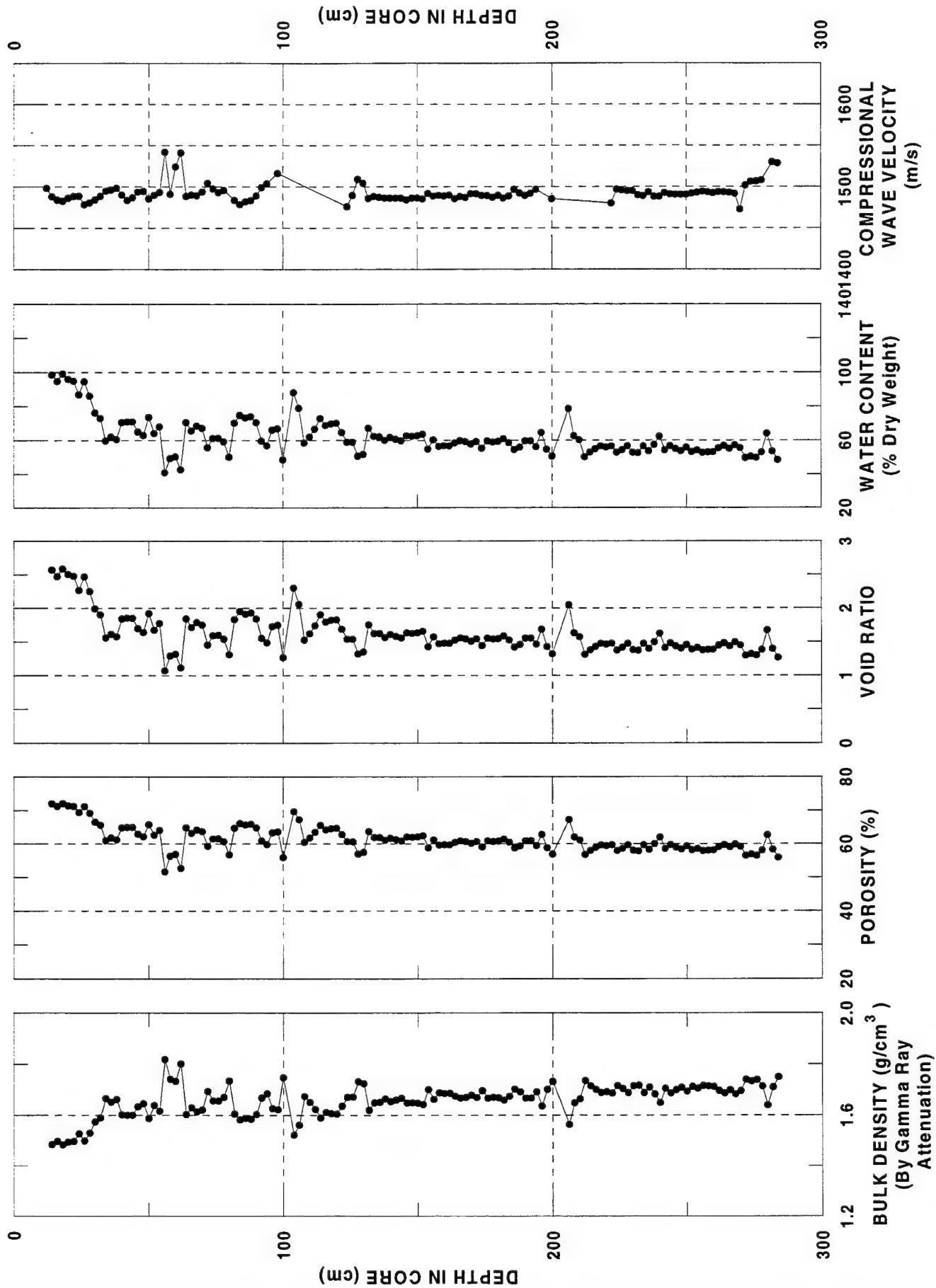
# HM 48, TAMU GEOTEK LOGGER DATA



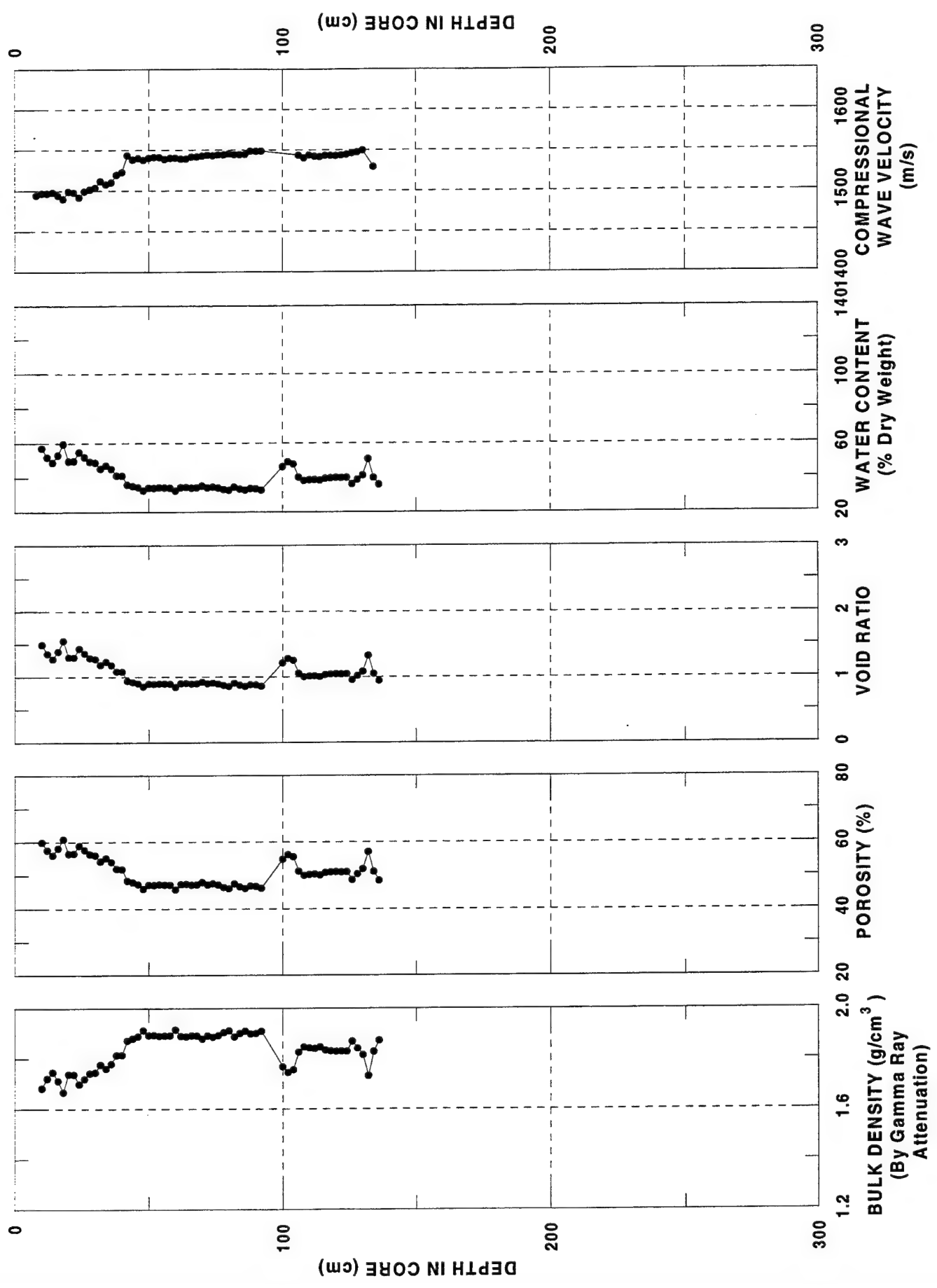
# HM 49, TAMU GEOTEK LOGGER DATA



# HM 50, TAMU GEOTEK LOGGER DATA

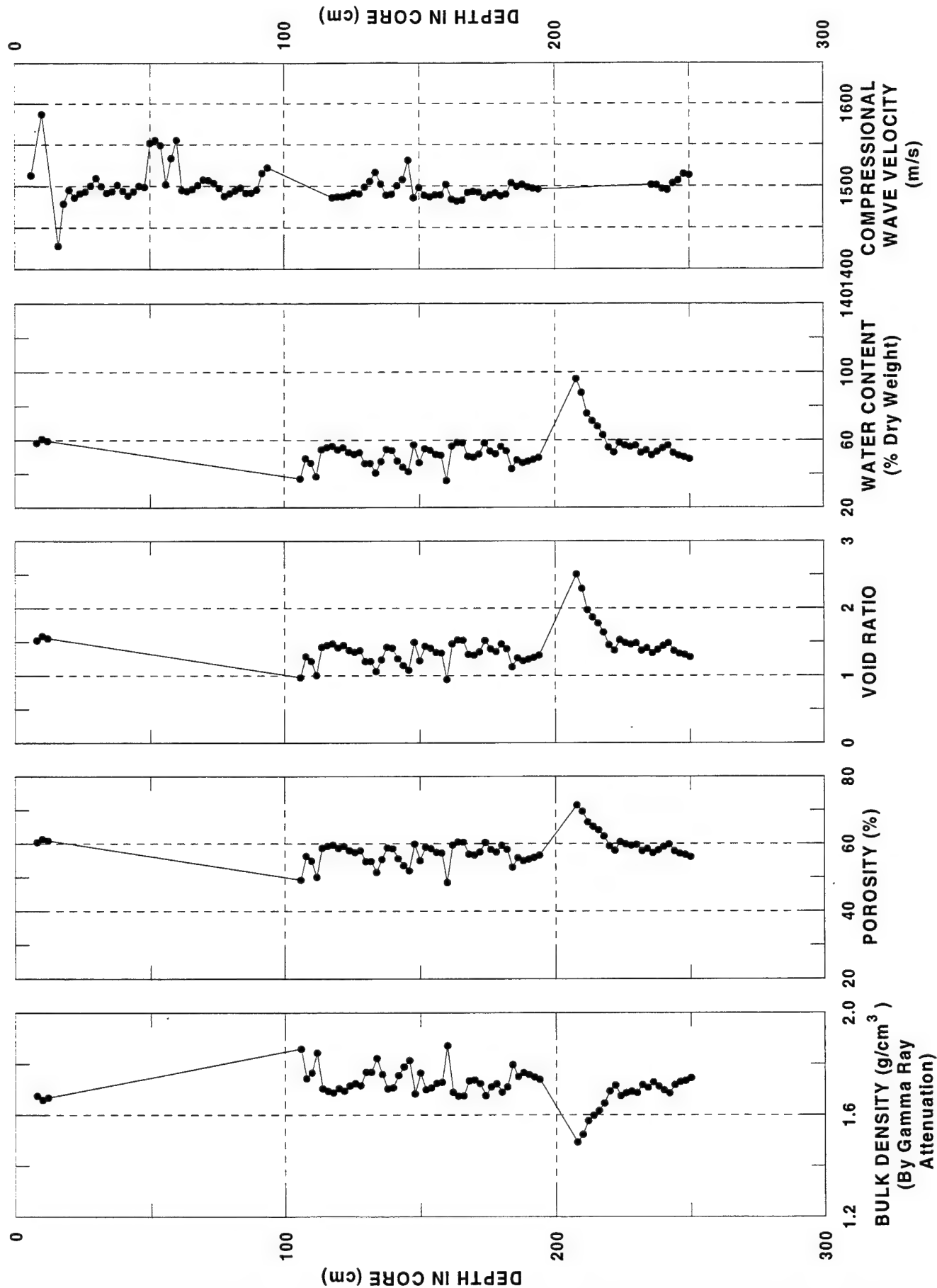


# HM 51, TAMU GEOTEK LOGGER DATA

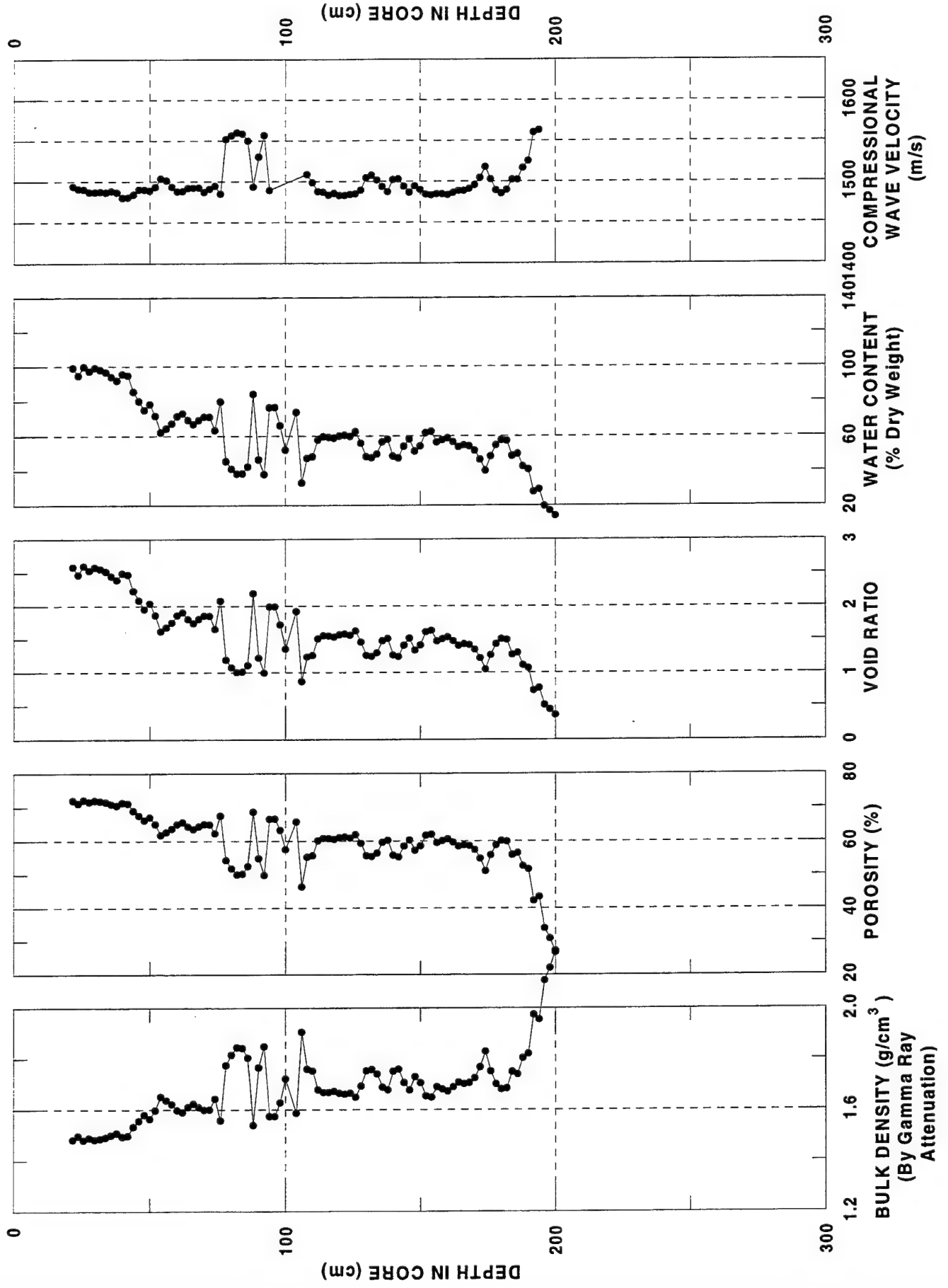




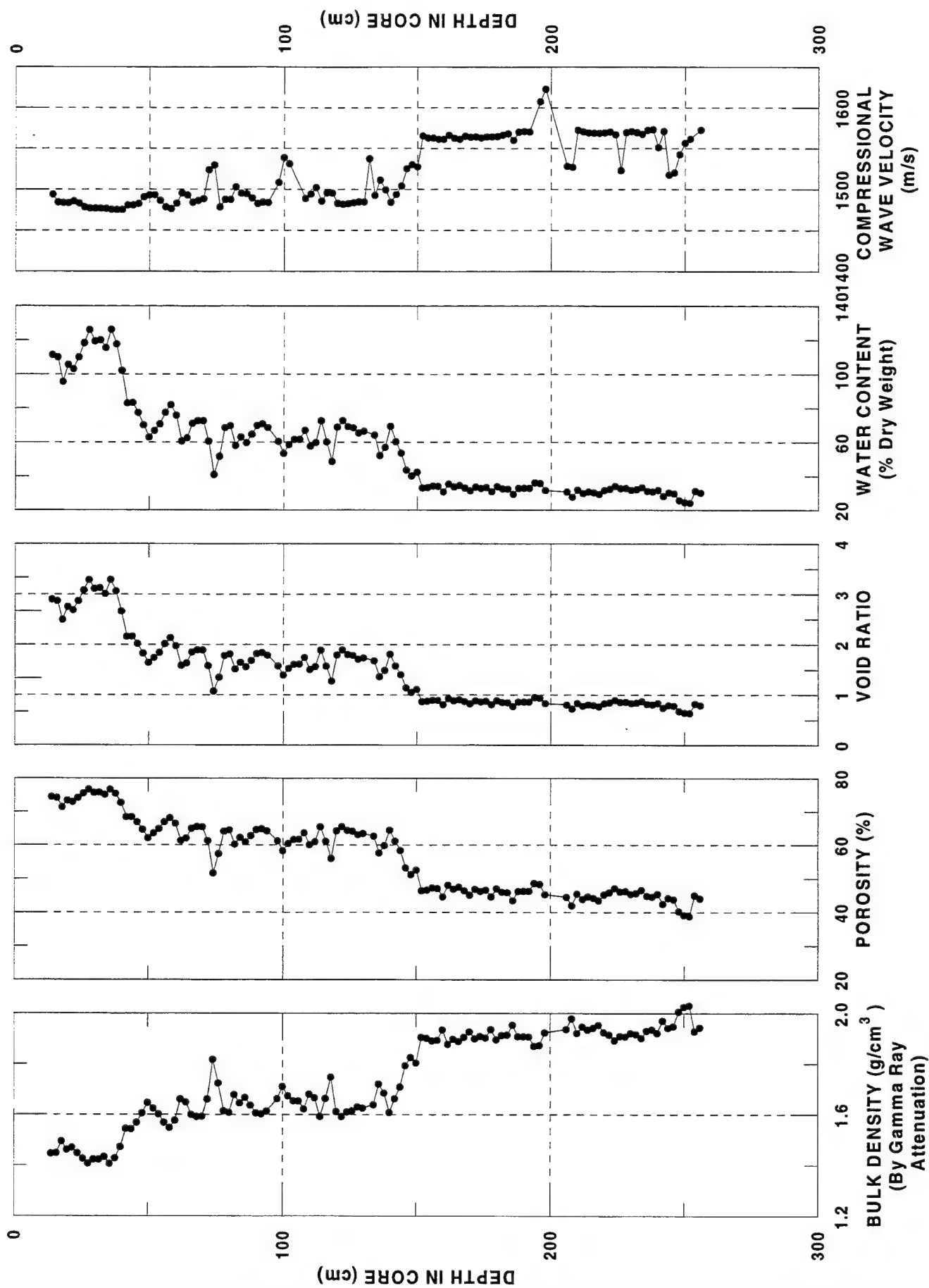
# HM 52, TAMU GEOTEK LOGGER DATA



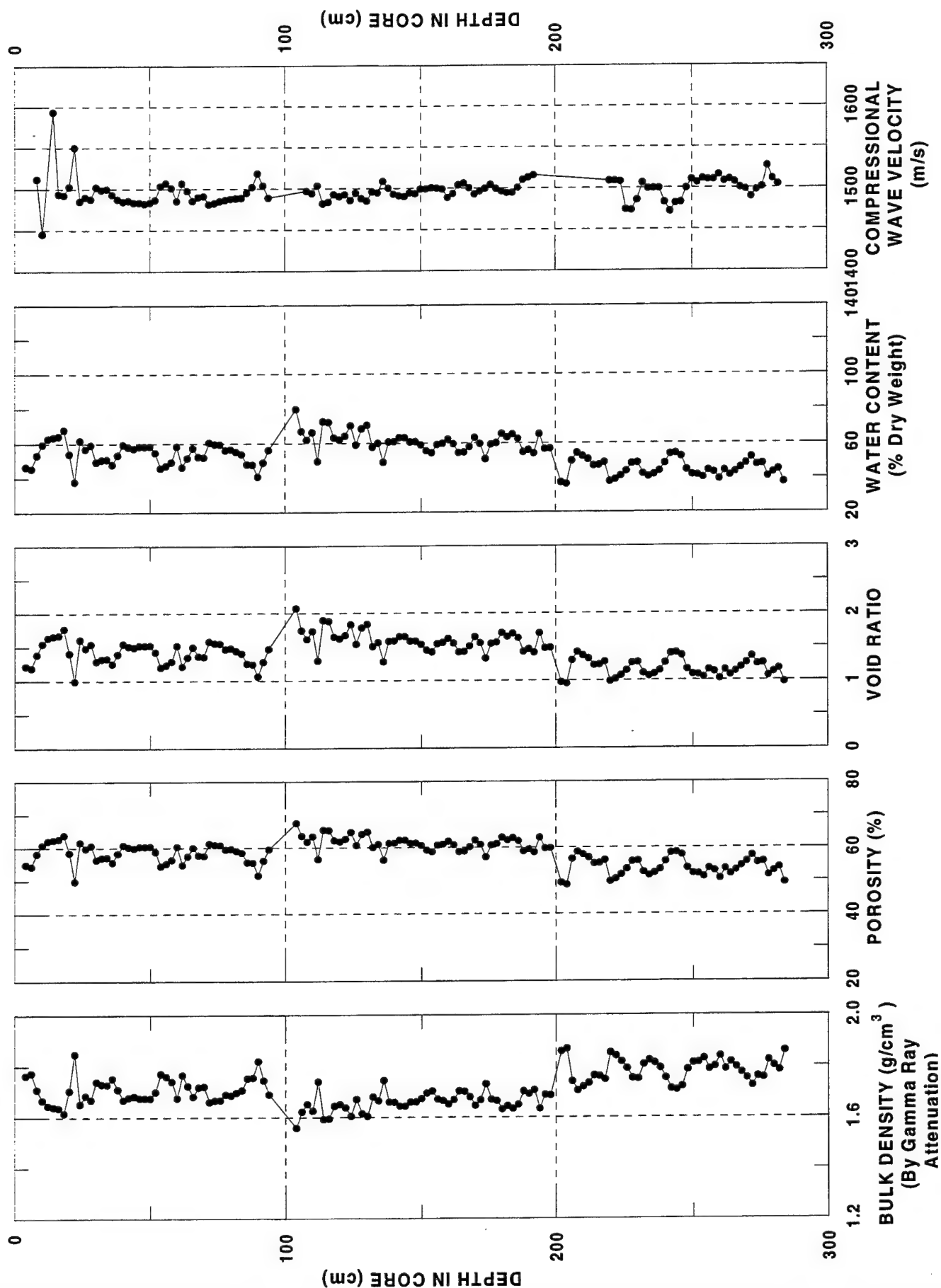
# HM 53, TAMU GEOTEK LOGGER DATA



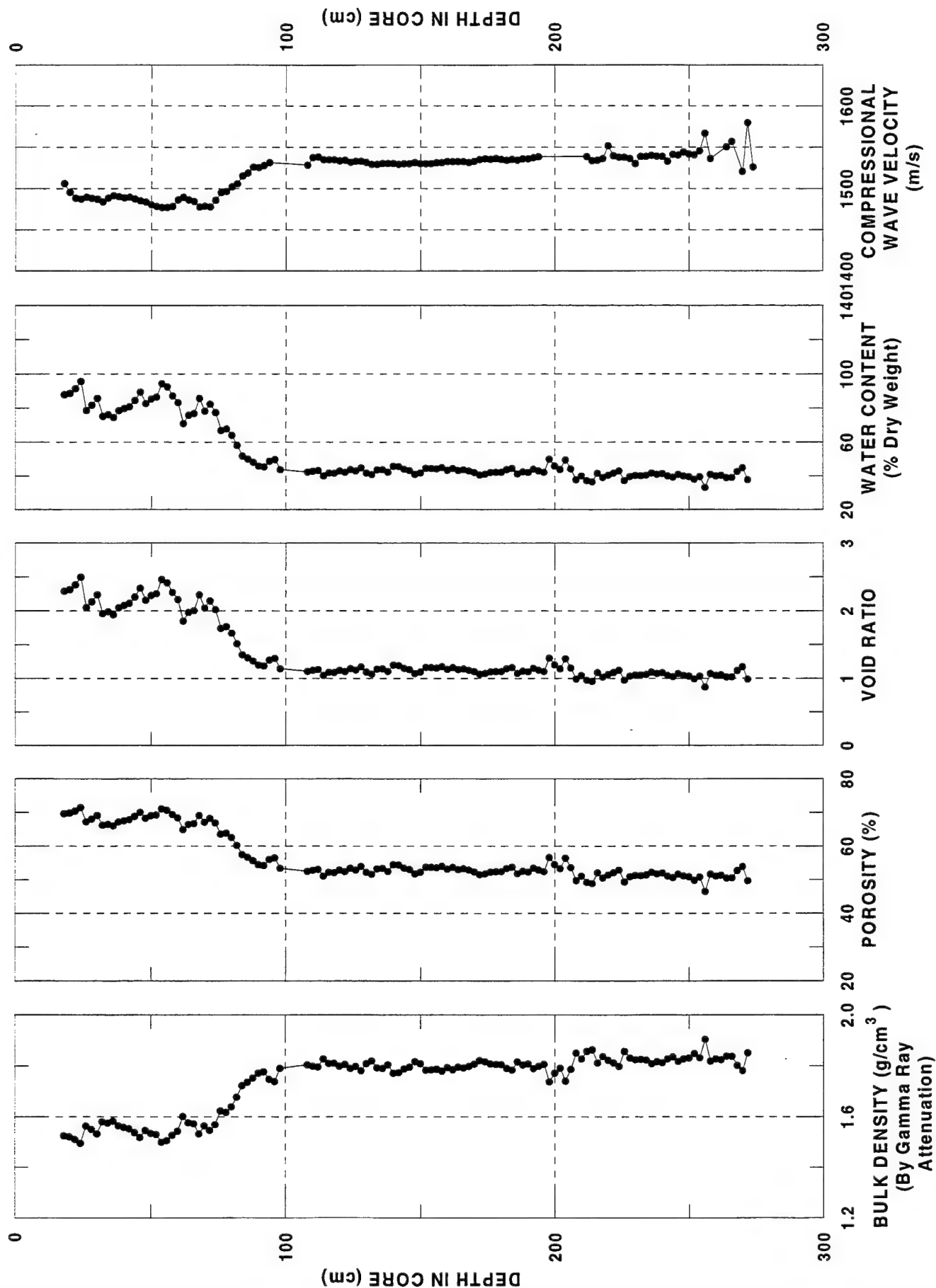
# HM 54, TAMU GEOTEK LOGGER DATA



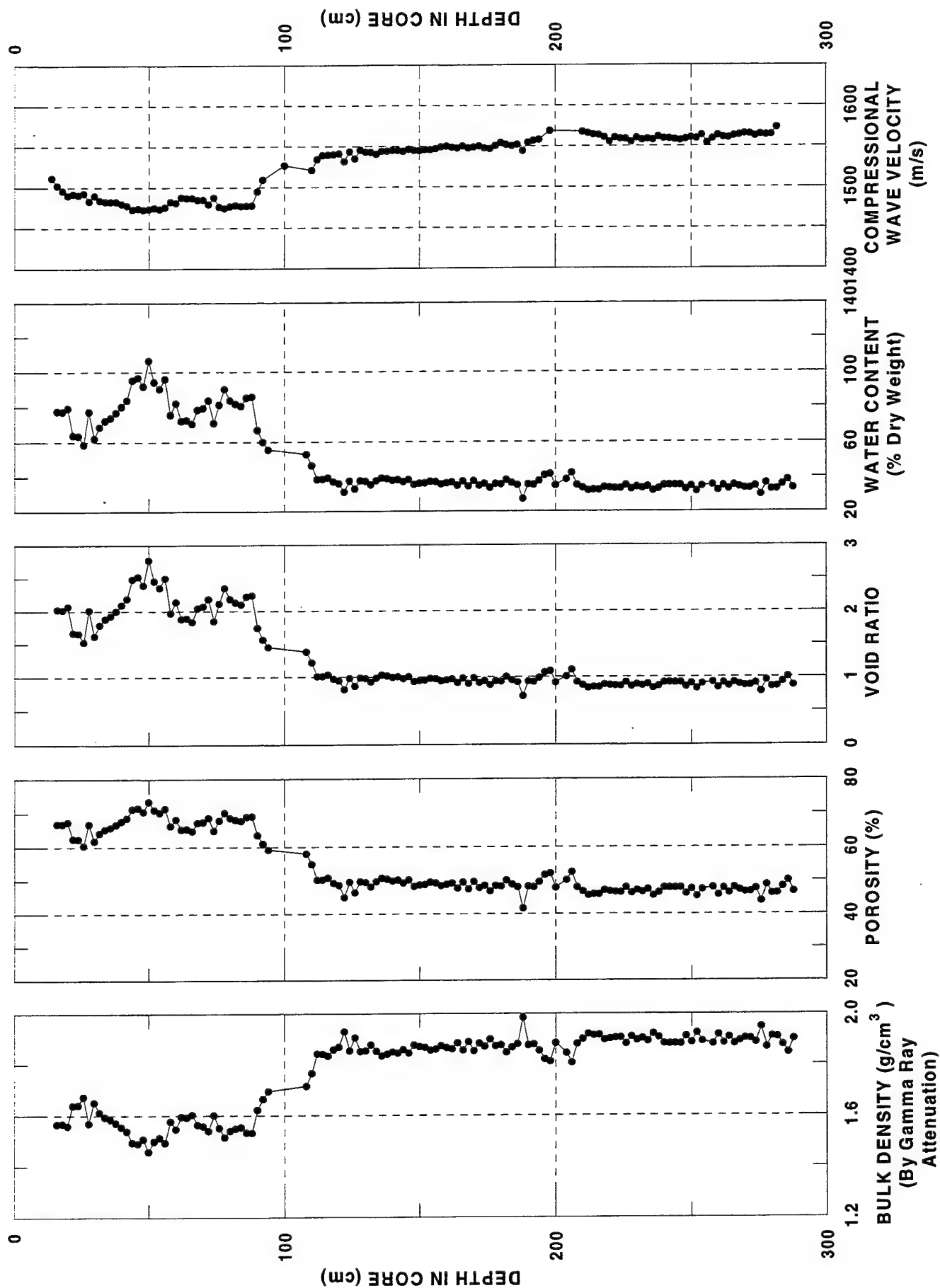
# HM 56, TAMU GEOTEK LOGGER DATA



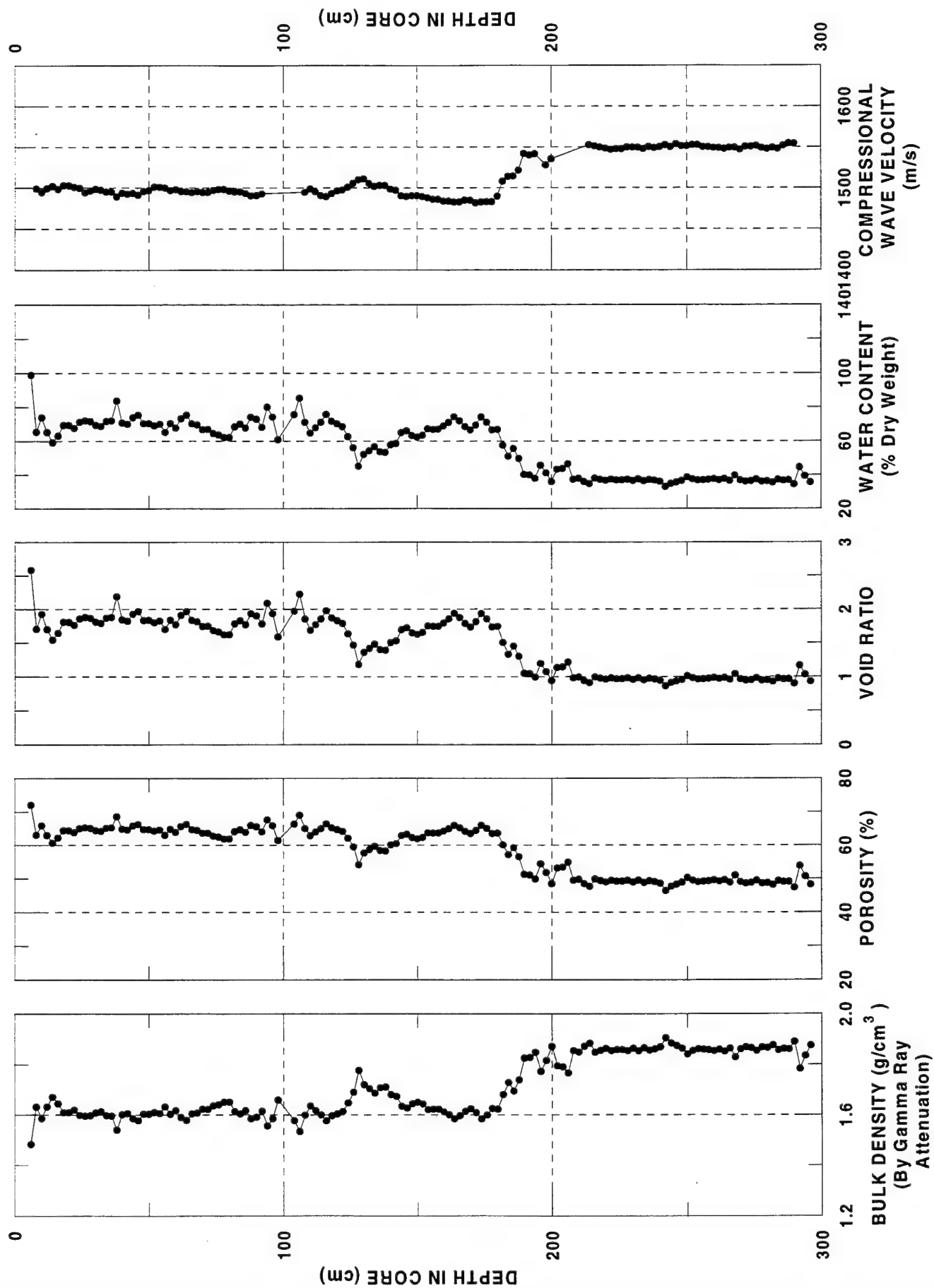
# HM 58, TAMU GEOTEK LOGGER DATA



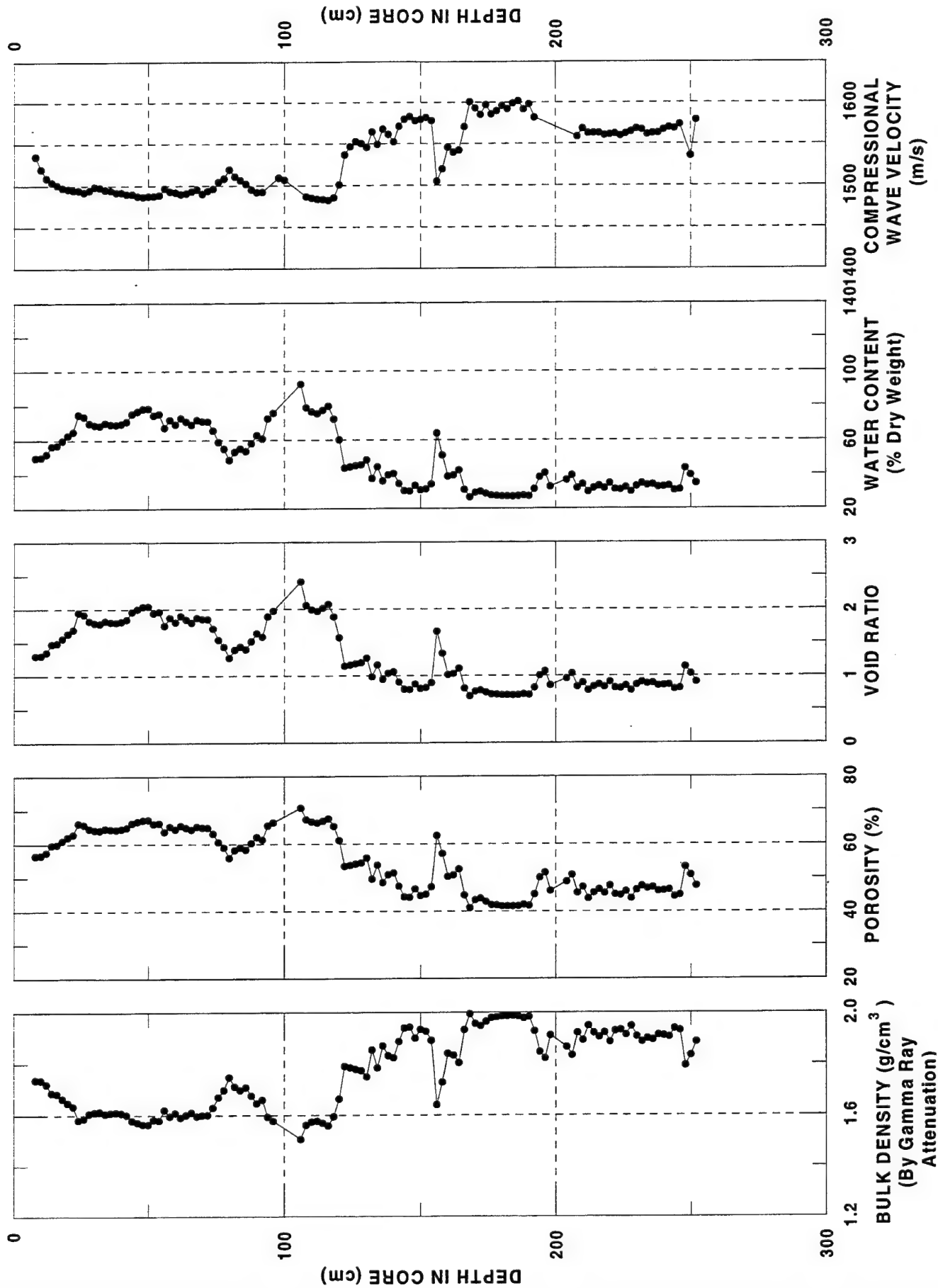
# HM 59, TAMU GEOTEK LOGGER DATA



# HM 60, TAMU GEOTEK LOGGER DATA

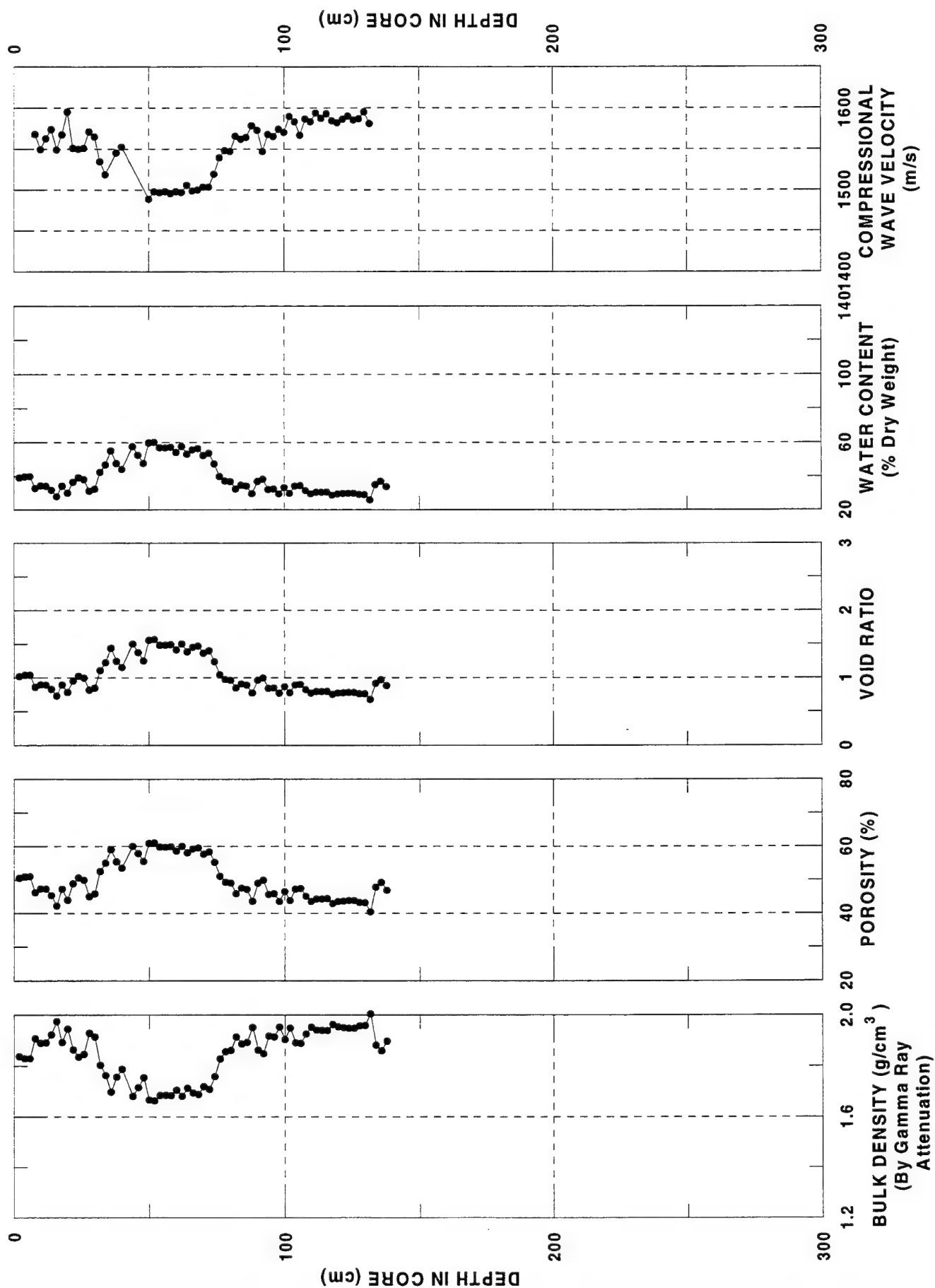


# HM 63, TAMU GEOTEK LOGGER DATA

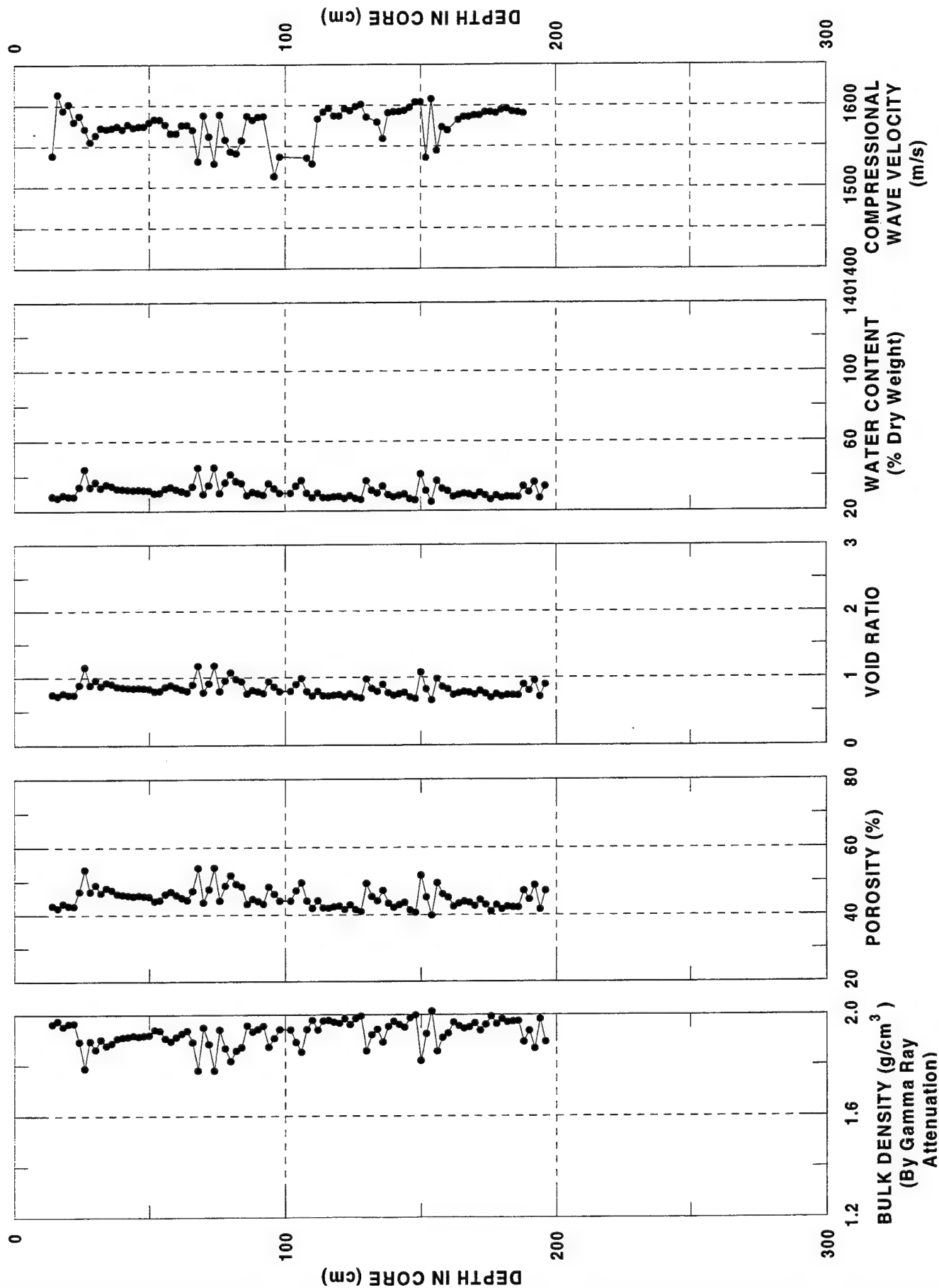




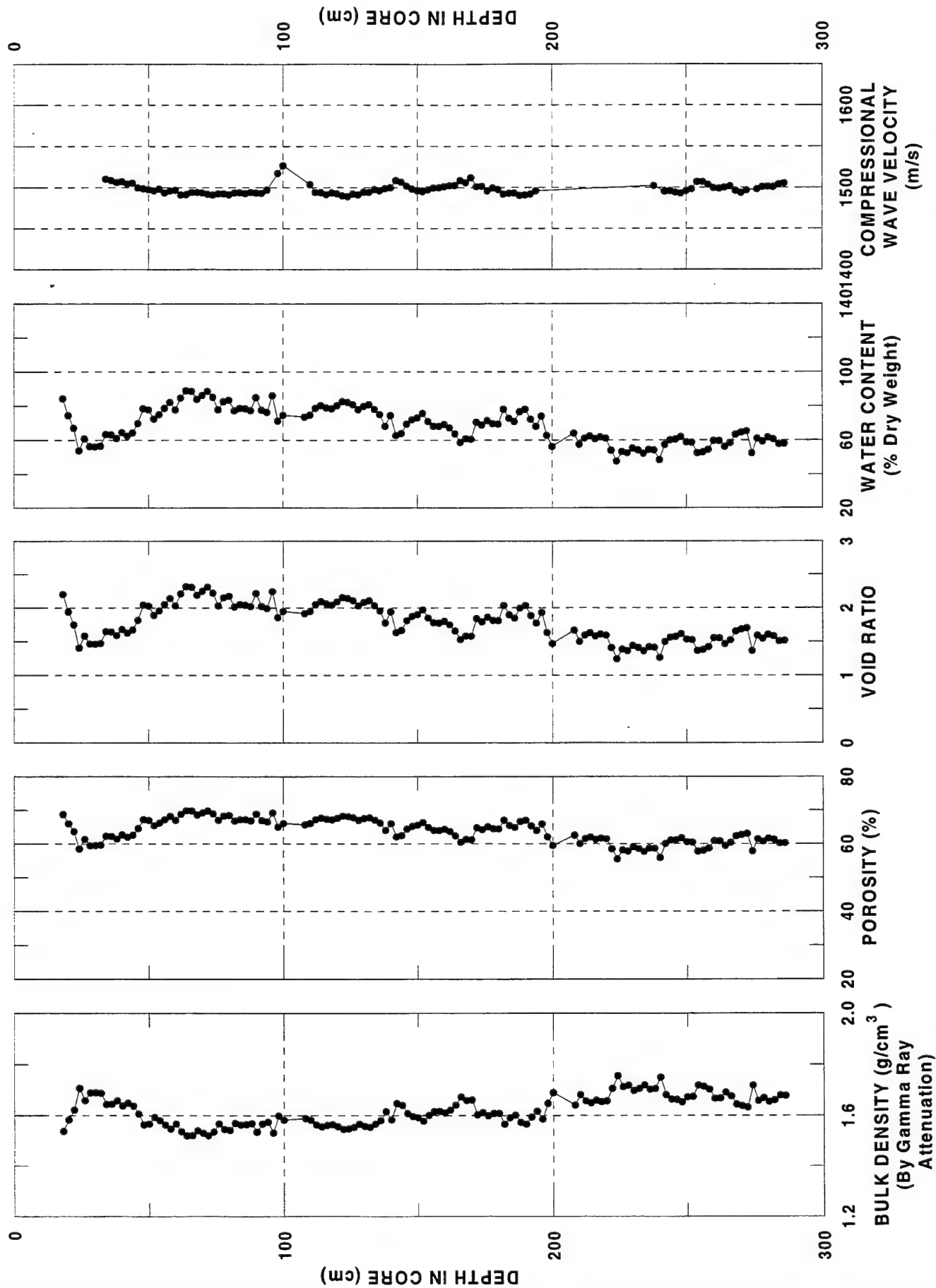
# HM 64, TAMU GEOTEK LOGGER DATA



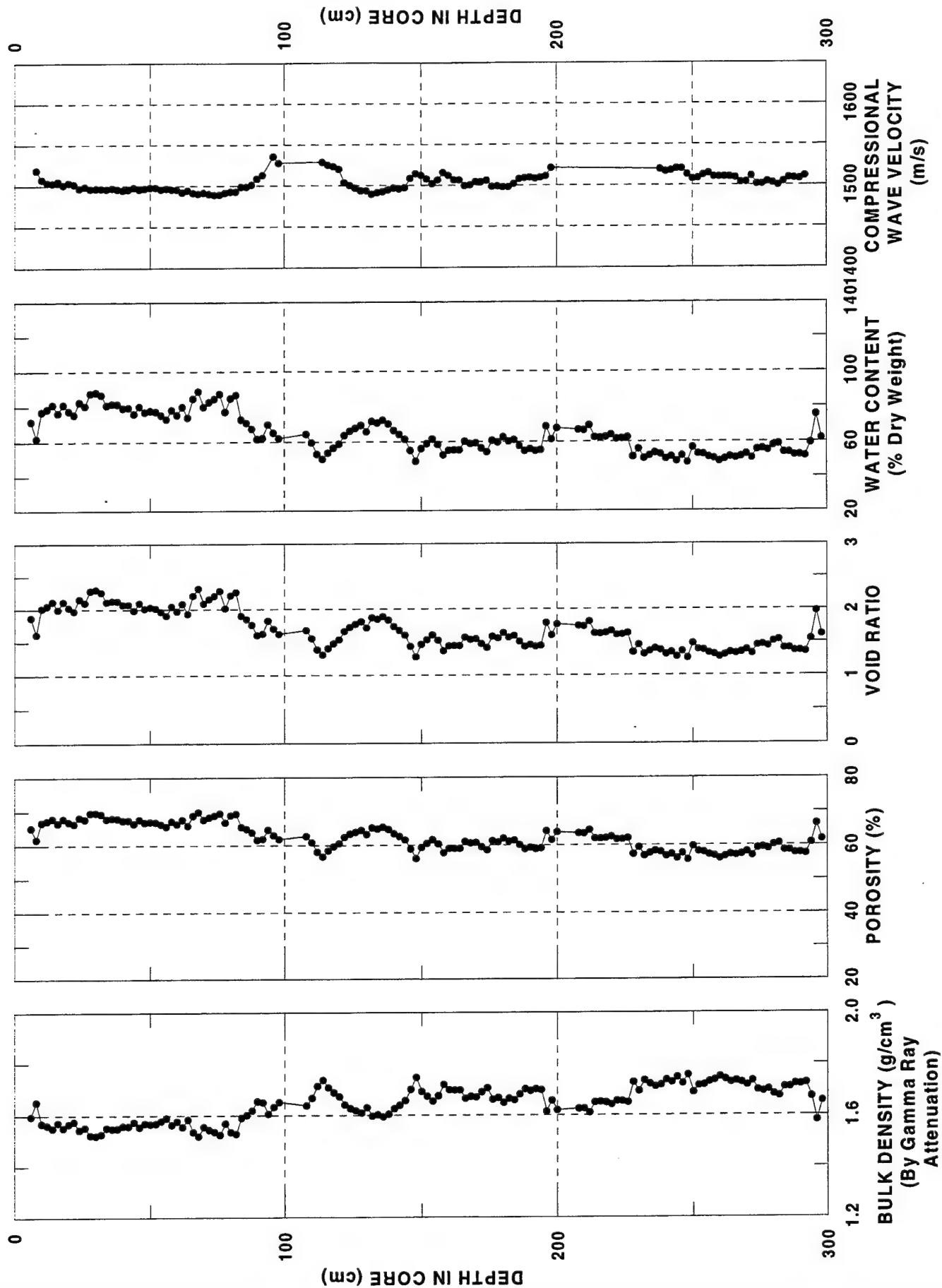
# HM 65, TAMU GEOTEK LOGGER DATA



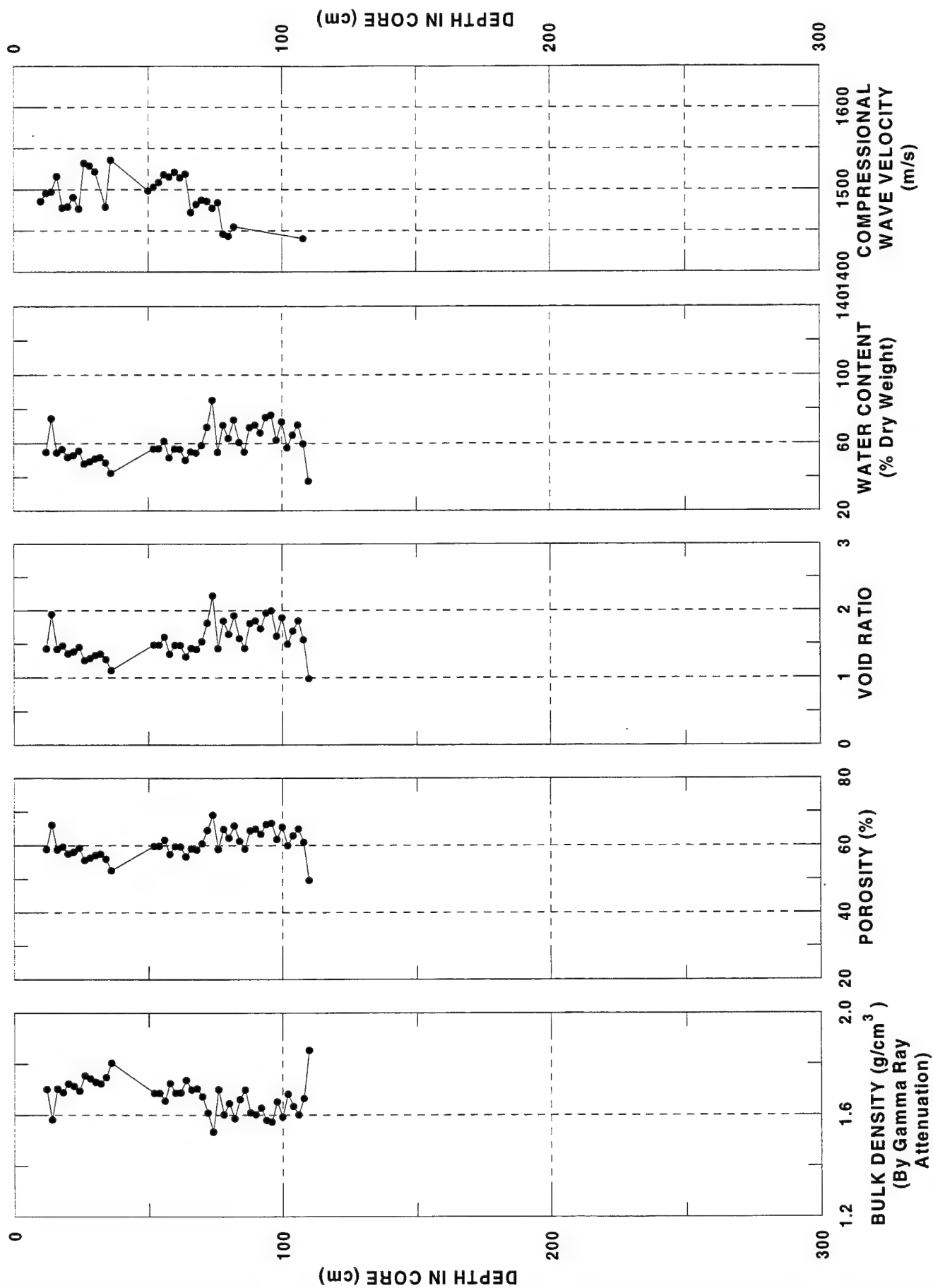
# HM 68, TAMU GEOTEK LOGGER DATA



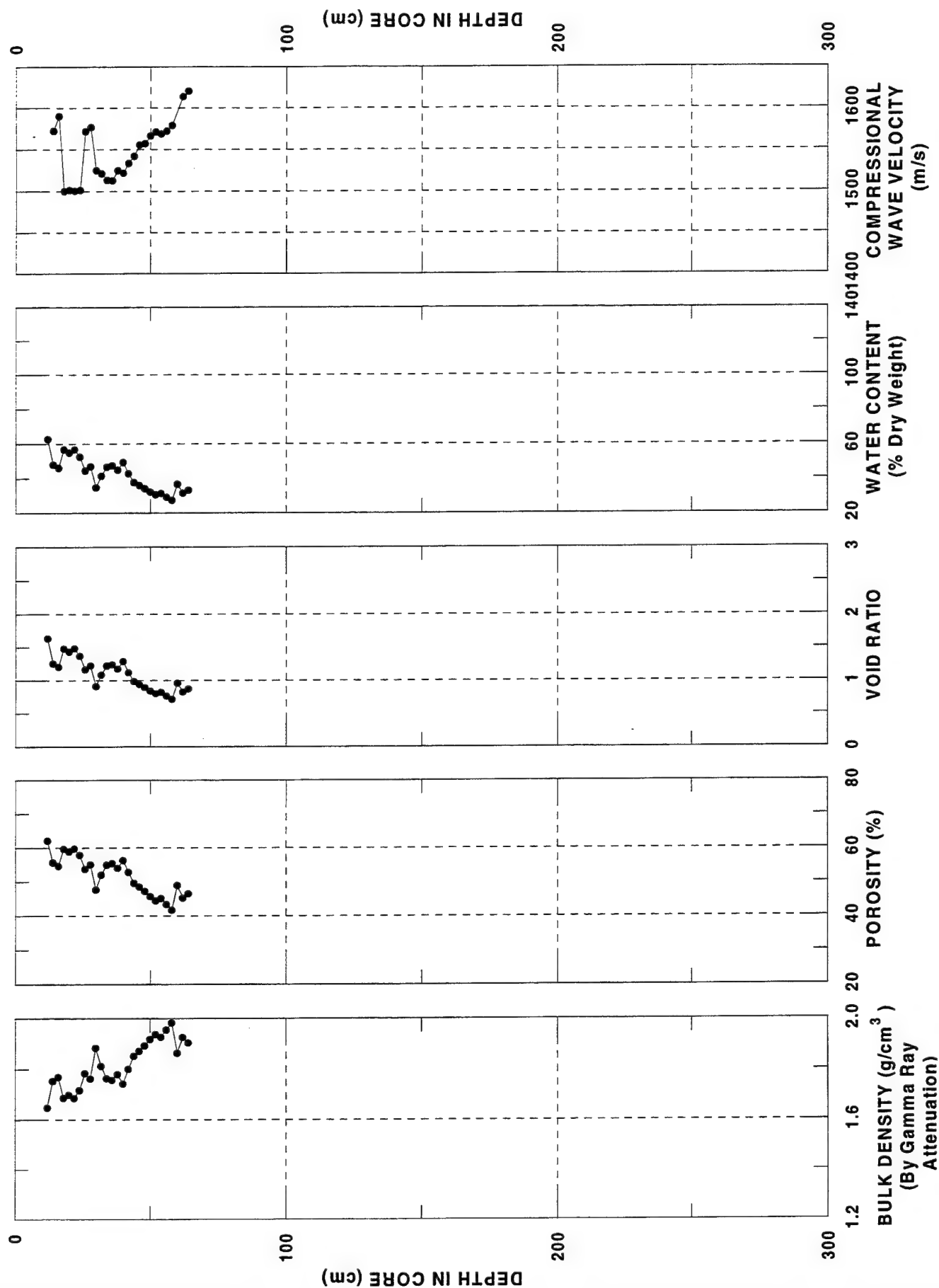
# HM 69, TAMU GEOTEK LOGGER DATA



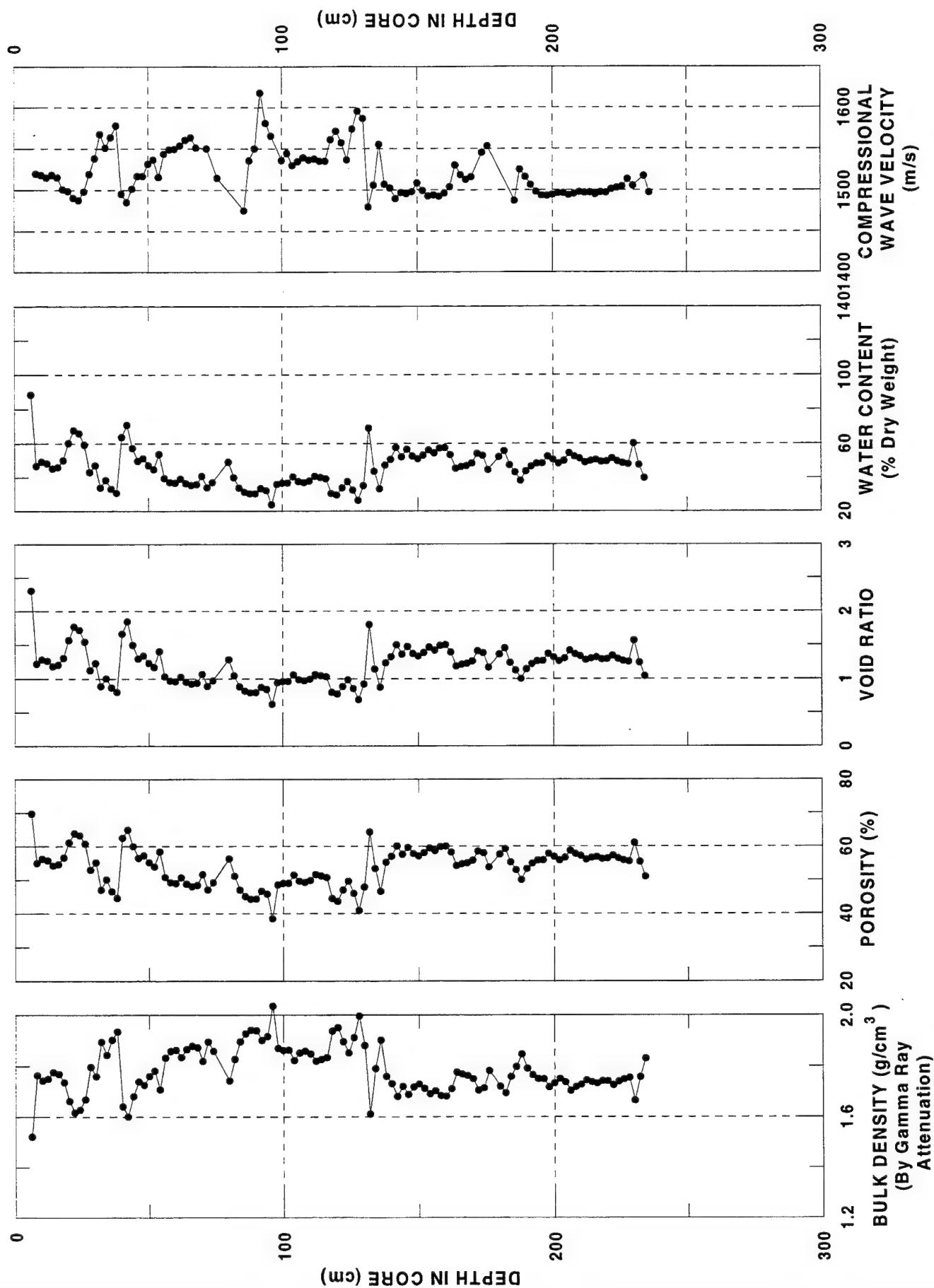
# HM 72, TAMU GEOTEK LOGGER DATA



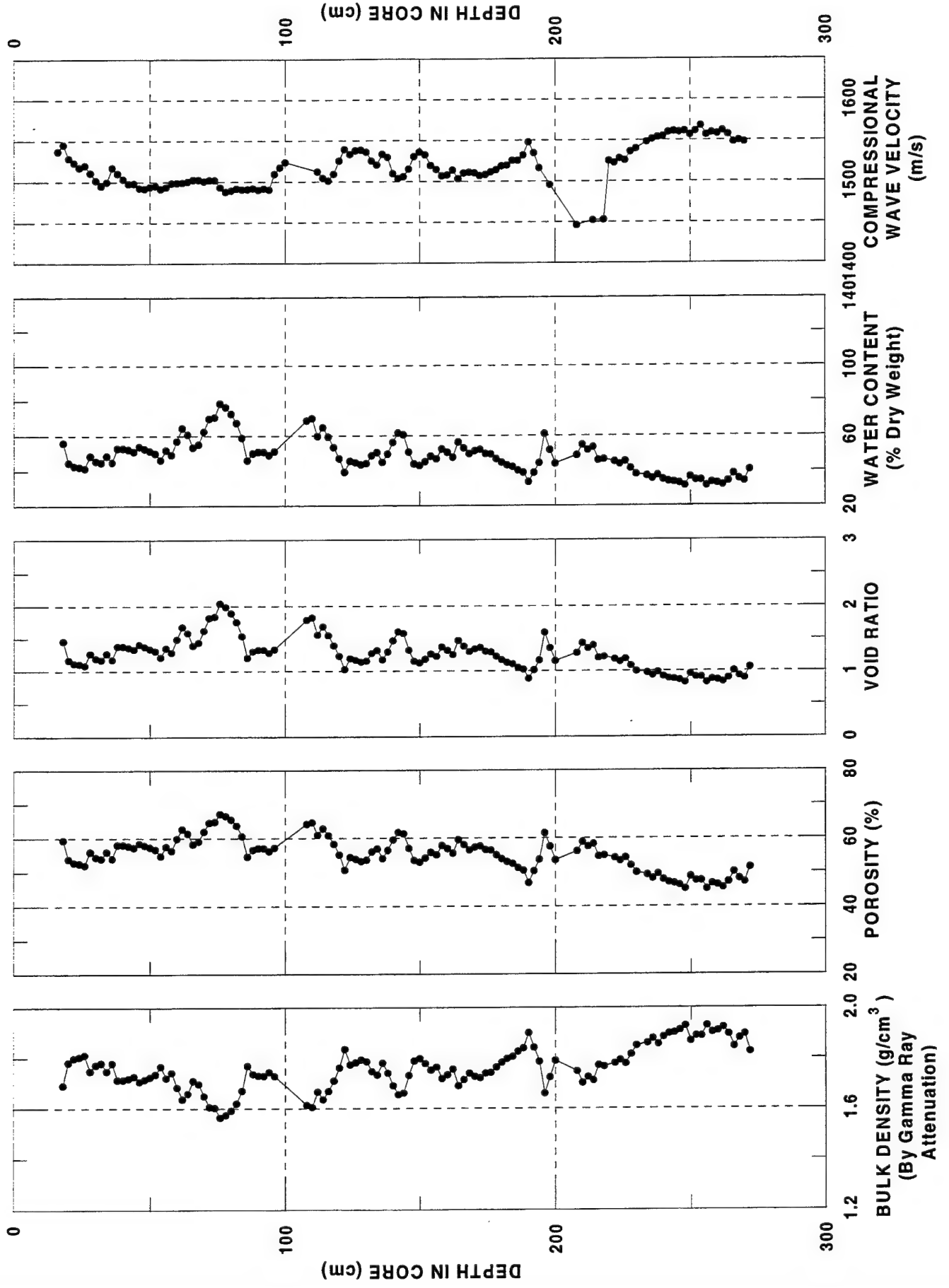
# HM 73, TAMU GEOTEK LOGGER DATA



# HM 74, TAMU GEOTEK LOGGER DATA

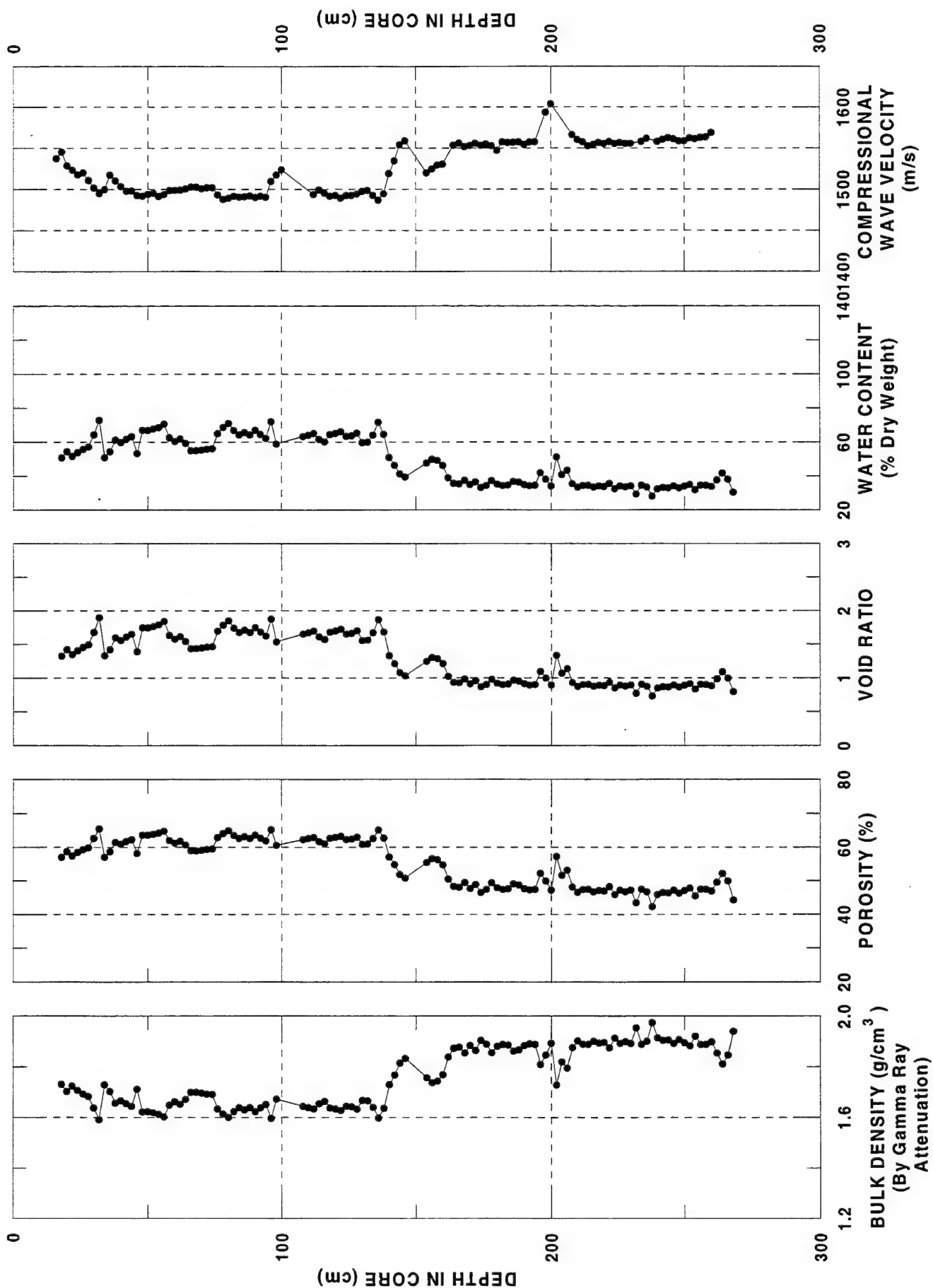


# HM 75, TAMU GEOTEK LOGGER DATA

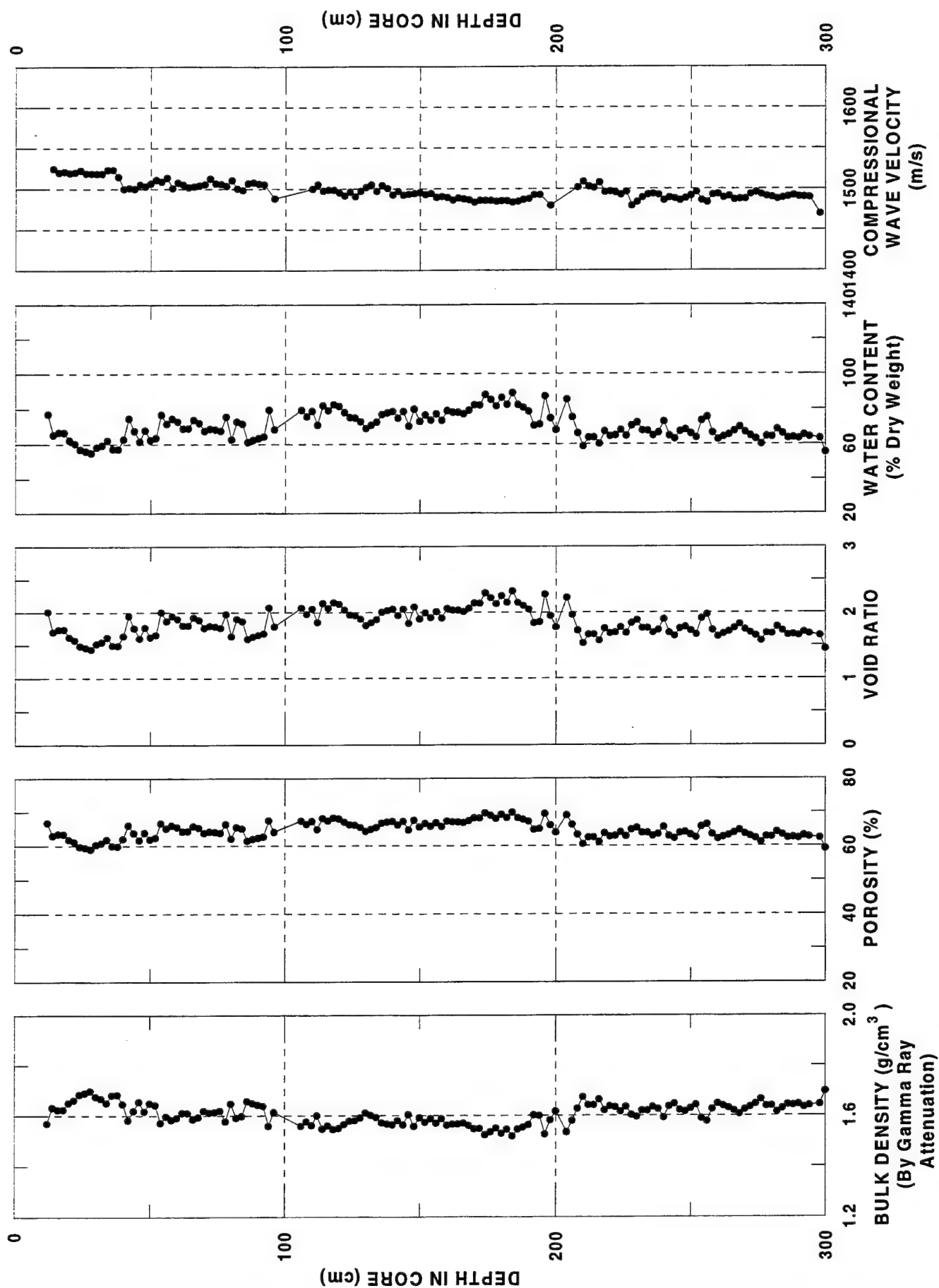




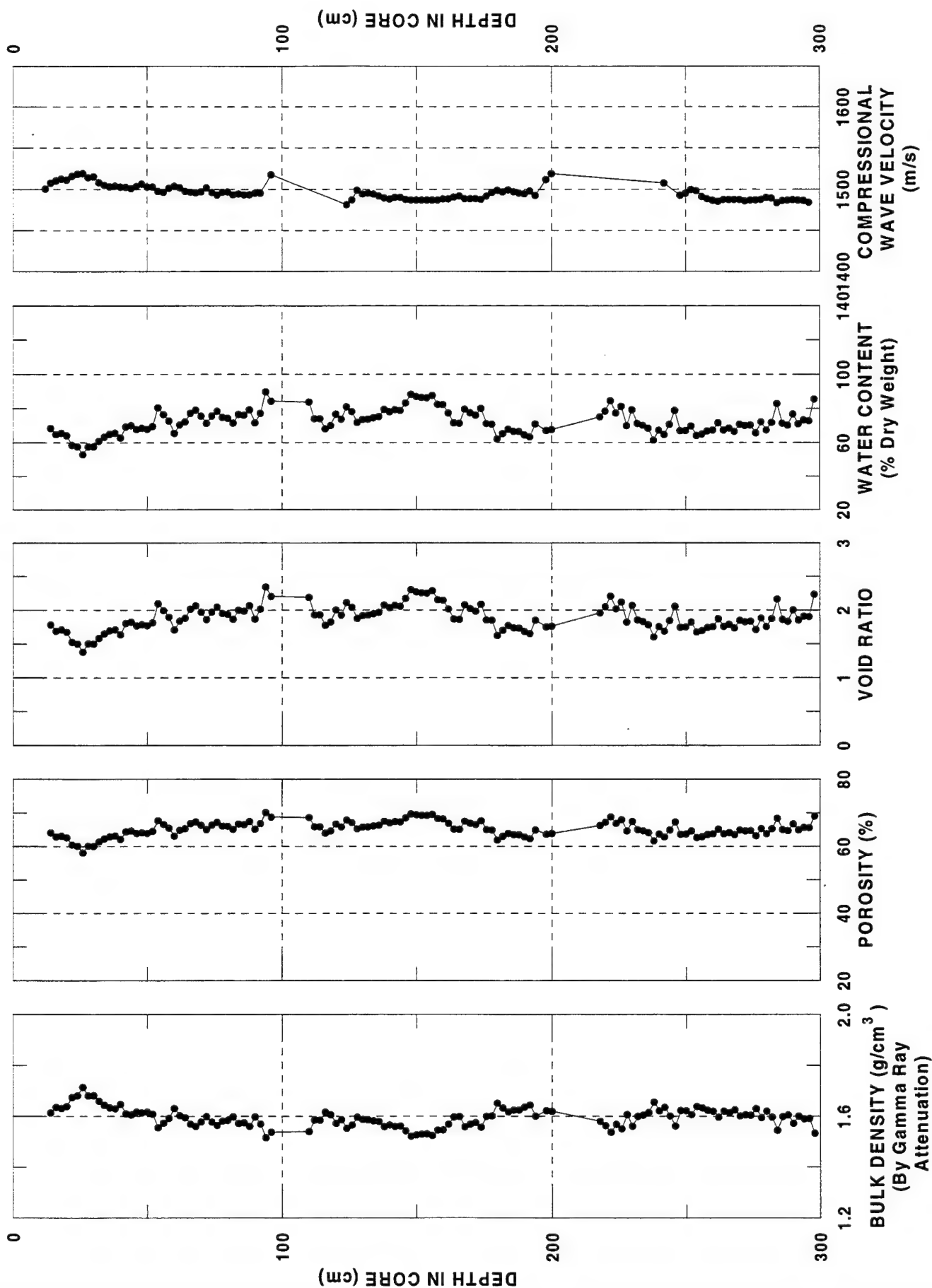
# HM 77, TAMU GEOTEK LOGGER DATA



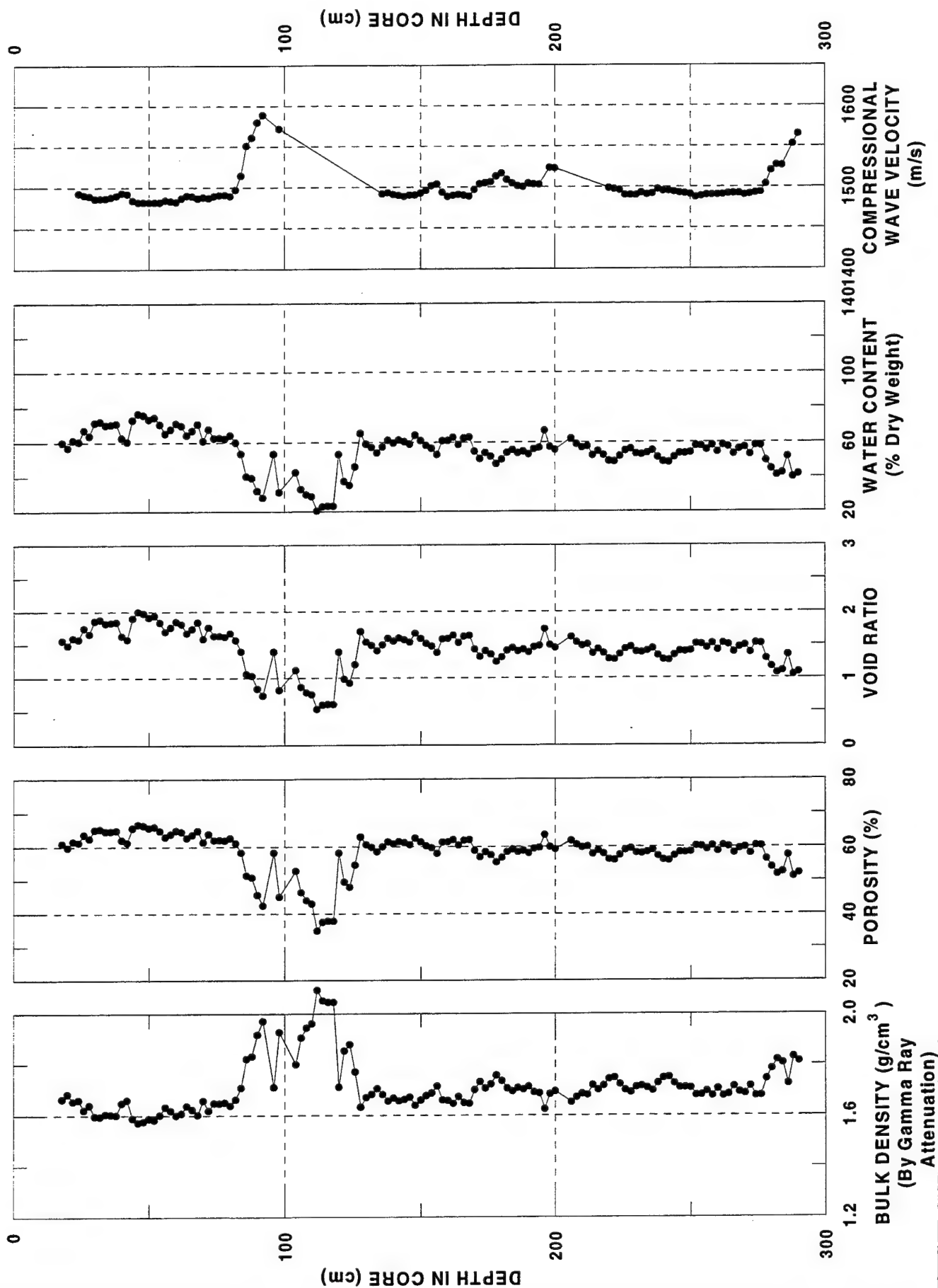
# HM 78, TAMU GEOTEK LOGGER DATA



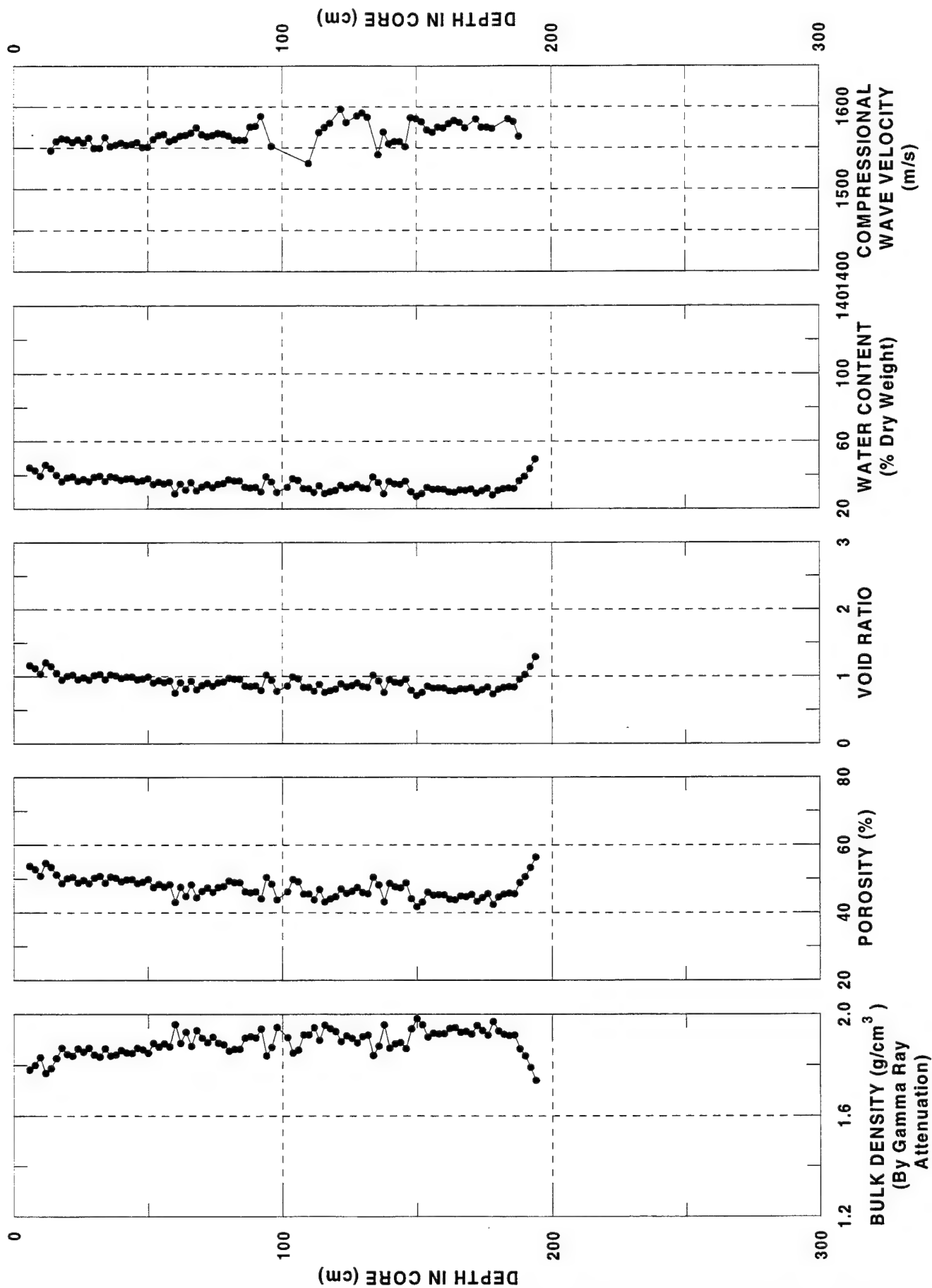
# HM 80, TAMU GEOTEK LOGGER DATA



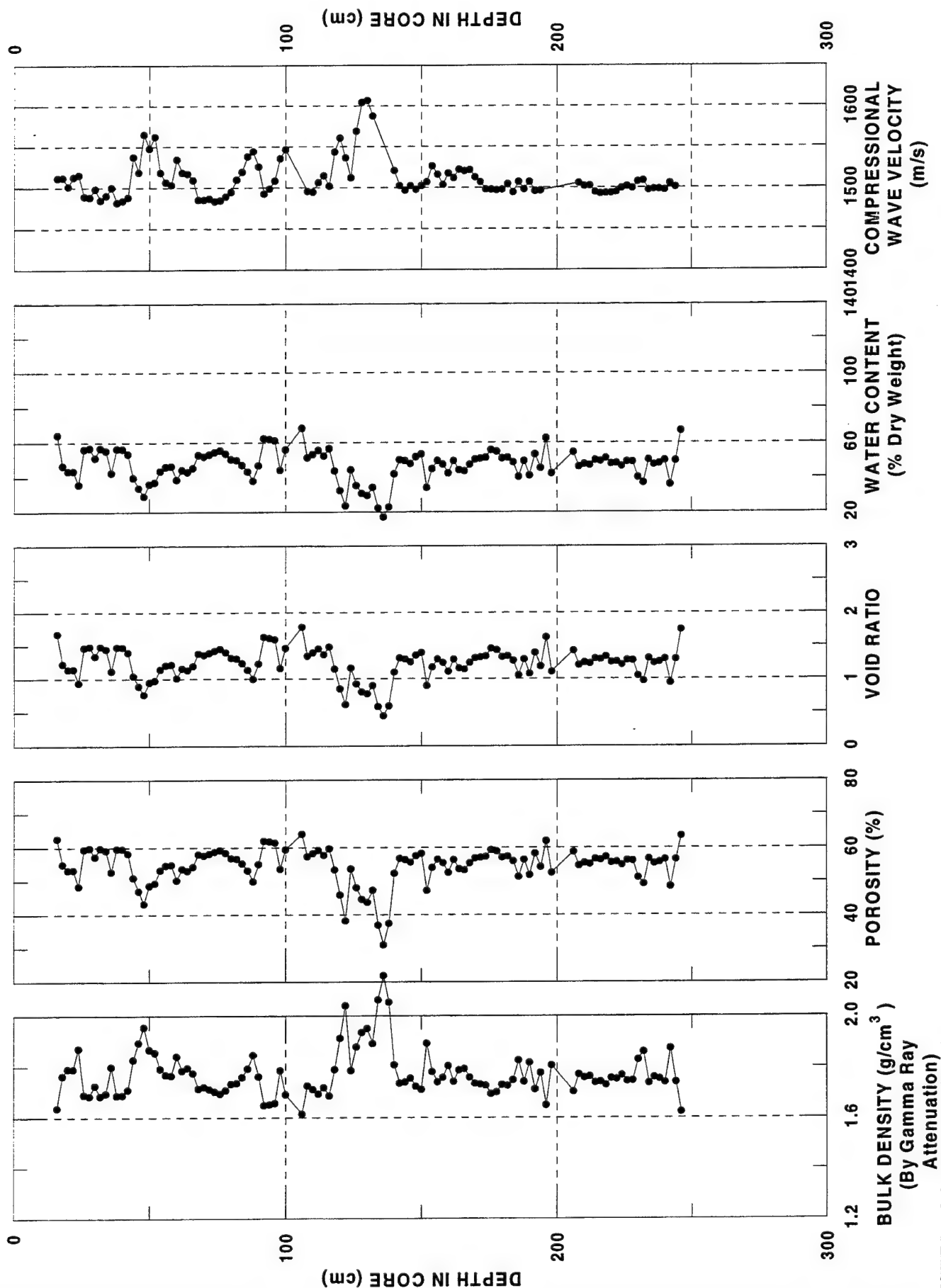
# HM 81, TAMU GEOTEK LOGGER DATA



# HM 86, TAMU GEOTEK LOGGER DATA



# HM 87, TAMU GEOTEK LOGGER DATA



## Appendix

\* This program reads in logger generated PC file then calculate velocity, Boyce density, porosity, water content, and void ratio.  
 Note: Need to "crush" the data file first.  
 Need an input AL calibrated file "aluminum.par" with calibrated slope on the first line and intercept on the second line.  
 Jia Y. Liu 8/7/96 \*/

```
include <stdio.h>
include <math.h>

define buffer 3000          /* store up to 3000 records */

define R_fc 1.128           /* Boyce density parameters */
define R_g 2.65
define R_f 1.024
define R_gc 2.65

define grain_den 2.67
define water_den 1.024

void main(int argc, char *argv[]) {
FILE *ifp1,*ifp2,*ofp1,*ofp2,*ofp3,*ofp4,*ofp5;

char vel_file[20],den_file[20],porosity_file[20],void_file[20],water_file[20];
int samp_interval;
double temp,core_diameter;
float liner_thickness,p_wave_offset,p_wave,gamma_count_time;
float gamma_cycle,section_length,temperature;
int i,depth,DBS;
float velocity[buffer],density[buffer],boyce_den[buffer];
float porosity[buffer],voidratio[buffer],water[buffer];
float section_depth[buffer];
float deviation[buffer];
double travel_time[buffer];
long gamma[buffer];
double C2,C1;
double slope,intercept;
char ch;

/* Check if the input command is correct */
if (argc!=3) {
printf("\n");
printf("This program reads in PC logger file then output velocity, Boyce de
printf("porosity, void ratio, and water content files.\n\n");
printf("Note: 1. You need to \"crush\" the data file before running this pr
printf("      e.g. crush test.dat > test_new.dat\n");
printf("      2. Need an input AL calibrated file \"aluminum.par\" with slo
printf("      first line and intercept on the second line \n");
printf("                                           Jia Y. Liu 8/96\n\n");
printf("Usage: logger <input file> <length of previous sections>\n\n");
exit(1);
}

/* Make sure the input file name exists */
ifp1=fopen(argv[1],"r");
if (ifp1==NULL) {
printf("Cannot open input file \"%s\"!\n",argv[1]);
exit(1);
}
```



```

/* Make sure the slope and intercept exists */
ifp2=fopen("aluminum.par","r");
if (ifp2==NULL) {
    printf("Cannot open input parameter file \"aluminum.par\"!\n",argv[1]);
    exit(1);
}

/* Make sure the starting depth exists */
if (argv[2]==NULL) {
    printf("Need input the length of previous sections!\n");
    exit(1);
}
DBS=atoi(argv[2]);

/* Read the slope and intercept file */
fscanf(ifp2, "%lf\n",&slope);
fscanf(ifp2, "%lf\n",&intercept);

/* Read the header. Note: the delimiter is TAB */
for (i=1;i<=16;i++) {
    if (i!=2 && i!=3 && i!=4 && i!=5 && i!=8 && i!=9 && i!=12 && i!=13 && i!=16)
        while (fgetc(ifp1)!='\n') ;
    else {
        while (fgetc(ifp1)!='\t') ;
        fscanf(ifp1,"%lf\n",&temp);
        if (i==2)
            samp_interval=temp;
        if (i==3)
            core_diameter=temp;
        if (i==4)
            liner_thickness=temp;
        if (i==5)
            p_wave_offset=temp;
        if (i==8)
            gamma_count_time=temp;
        if (i==9)
            gamma_cycle=temp;
        if (i==12)
            p_wave=temp;
        if (i==13)
            section_length=temp;
        if (i==16)
            temperature=temp;
    }
}

if (p_wave!=0.) {
    strcpy(vel_file,argv[1]);
    strcat(vel_file,".vel");
    ofp1=fopen(vel_file,"w");
}

if (gamma_count_time!=0.) {
    strcpy(den_file,argv[1]);
    strcat(den_file,".den");
    ofp2=fopen(den_file,"w");
    strcpy(porosity_file,argv[1]);
    strcat(porosity_file,".por");
    ofp3=fopen(porosity_file,"w");
}

```

```

strcpy(void_file,argv[1]);
strcat(void_file, ".voi");
ofp4=fopen(void_file, "w");
strcpy(water_file,argv[1]);
strcat(water_file, ".wat");
ofp5=fopen(water_file, "w");
}

for (i=0;i<=(int)(section_length)+16;i++)
  fscanf(ifp1,"%f %f %lf %*f %d %*d %*d \n",&section_depth[i],&deviation[i],&tra

/* Calculate density, porosity, void ratio, and water content */
if (DBS == 0) {
  fprintf(ofp2,"Depth(cm)\tBulk density(g/cc)\n");
  fprintf(ofp3,"Depth(cm)\tPorosity (%) \n");
  fprintf(ofp4,"Depth(cm)\tVoid ratio\n");
  fprintf(ofp5,"Depth(cm)\tWater content (%) \n");
}

for (depth=1+14/samp_interval;depth<=(int)(section_length+14)/samp_interval;d
  density[depth-14/samp_interval]=(log(gamma[depth]/(gamma_count_time*gamma_c
  boyce_den[depth-14/samp_interval]=(density[depth-14/samp_interval]-R_fc)*(R
  fprintf(ofp2,"%d\t%f\n",samp_interval*(depth-14/samp_interval)+DBS,boyce_de

  porosity[depth-14/samp_interval]=(grain_den-boyce_den[depth-14/samp_interva
  fprintf(ofp3,"%d\t%f\n",samp_interval*(depth-14/samp_interval)+DBS,porosity

  voidratio[depth-14/samp_interval]=porosity[depth-14/samp_interval]/100./(1-
  fprintf(ofp4,"%d\t%f\n",samp_interval*(depth-14/samp_interval)+DBS,voidrati

  water[depth-14/samp_interval]=(water_den/grain_den)*voidratio[depth-14/samp
  fprintf(ofp5,"%d\t%f\n",samp_interval*(depth-14/samp_interval)+DBS,water[de
}

/* Calculate velocity */
if (p_wave!=0.) {
  if (DBS == 0)
    fprintf(ofp1,"Depth(cm)\tVelocity(m/sec)\n");
  for (depth=1;depth<=(int)(section_length/samp_interval);depth++) {
    velocity[depth]=(core_diameter+deviation[depth]-2.*liner_thickness)/(travel
    fprintf(ofp1,"%d\t%f\n",samp_interval*depth+DBS,velocity[depth]);
  }
}

/* Print out output file names */
printf("\n");
printf("The output velocity file is: %s.vel \n",argv[1]);
printf("The output Boyce density file is: %s.den \n",argv[1]);
printf("The output porosity file is: %s.por \n",argv[1]);
printf("The output void ratio file is: %s.voi \n",argv[1]);
printf("The output water content file is: %s.wat \n\n",argv[1]);

```